

Report for Indiana Department of Transportation

US 50 Environmental Assessment/Corridor Study

Dearborn County, Indiana

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B	Copies of Agency Comments

OVERVIEW

The study of US 50 in Dearborn County, Indiana is sponsored by the Indiana Department of Transportation (INDOT) and the Federal Highway Administration (FHWA). Recommendations of this study will be reviewed by INDOT for inclusion in the State's Long Range Transportation Plan.

The corridor termini are Dillsboro on the west end and the intersection of US 50 and State Route (SR) 1/Bellevue Avenue (I-275 Connector) on the east end. The study corridor passes near the City of Dillsboro and through the Cities of Aurora, Lawrenceburg, and Greendale and is approximately 18 miles in length. The general study area includes the southern portion of Dearborn County.

The study is being directed by a management team of INDOT and FHWA through their primary consultant Strand Associates, Inc.[®] (Strand), along with team members Wilbur Smith Associates and Doe-Anderson, Inc. Stakeholder participation was coordinated through a Community Advisory Committee (CAC), comprised of local government officials, economic development groups, local businesses, neighborhood groups, and other interested parties in the Dearborn County area. Public meetings were held in Lawrenceburg to elicit general public comment. Early coordination with state and federal agencies has also been conducted to provide agencies with the opportunity to review and comment on all potential alternatives.

The study is being conducted as an Environmental Assessment (EA)/Corridor Study in accordance with FHWA's *Indiana's Streamlined Environmental Impact Statement (EIS) Procedures*. The general purpose of this study is to establish the central purpose and need for improvements along the corridor, develop and analyze alternatives which meet the purpose and need, and make recommendations for projects of independent utility which should be advanced for future development and study. Those projects identified for future development will be subject to further evaluation in the NEPA process as required (EIS, EA/FONSI, CE).

The Gateway Study is referred to in several locations of this report. The Gateway Study is a current investigation sponsored by The Ohio-Kentucky-Indiana Regional Council of Governments (OKI) and Dearborn County, completed by M.E. Companies. This study is a companion study to the US 50 EA/Corridor Study and is evaluating current land use and access management along US 50. The purpose of the study is to identify and implement solutions to chronic traffic congestion on US 50 and develop a plan for land use, access management, and street layout that increases safety and the overall efficiency of the corridor. In conjunction with proposed improvements from this US 50 EA/Corridor Study, the Gateway Study is intended to coordinate proposed US 50 improvements to maximize the economic potential of US 50. Recommendations from this study will be evaluated by INDOT for inclusion as short- and long-term improvements to various segments of the corridor. Access management solutions to be determined by the Gateway Study are included in this EA/Corridor report as recommended improvement solutions, although specific projects of independent utility have not been identified.

SUMMARY OF PURPOSE AND NEED

For discussion in this report, purpose and need for the project has been divided into four categories: Congestion, Safety, Tanner's Creek Bridge, and US 50 as a Statewide Mobility Corridor. For ease of presentation, the Corridor was also divided into four segments: Segment 1-Dillsboro to Aurora (SR 262 to SR 148); Segment 2-Aurora to Lawrenceburg (SR 148 to SR 48); Segment 3-Lawrenceburg (SR 48 to Arch St.); and Segment 4-Greendale (Arch St. to I-275). Each of these segments is discussed in greater length in Section 2 of this report.

Based on an assessment of purpose and need, the underlying need for improvements along US 50 is based on current and forecasted deficiencies in Level of Service (LOS) at several intersections present in Segments 2, 3 and 4. Additionally, safety concerns, based on current crash rates, are present in Segment 2, and at the intersection of US 50 and Arch Street (between Segments 3 and 4) and for the US 50 and SR 48 intersection (between Segments 2 and 3). Tanner's Creek Bridge improvements are essential, since this is the only major crossing over Tanner's Creek for the County, and the current structure received a sufficiency rating of less than 50, classifying it as functionally obsolete. US 50's designation as a Statewide Mobility Corridor is a demonstration of its significance to vehicular and commercial truck movement through the state. Existing volume-to-capacity ratios present strong evidence that the eastern section of the US 50 Corridor is failing to fulfill its function as a statewide mobility corridor. Currently, Segments 3 and 4 cannot provide high speed, free-flowing conditions, efficiently service the large volume of through traffic, or provide adequately for heavy commercial traffic flow. Forecasts of future traffic volumes indicate even greater periods of congestion and a further reduction in the ability of this section of US 50 to provide adequate mobility between neighboring urban communities.

RECOMMENDATIONS

After analysis of several alternatives, the following recommended alternatives are provided for further evaluation. These are divided into each segment of the corridor as described in the report, and are further divided into short- and long-term recommended improvements:

Segment 1 – Dillsboro to Aurora (SR 262 TO SR 148)

Short- and Long-Term Improvements:

- *Access Management Solutions – To be determined by Gateway Study*

Segment 2 – Aurora to Lawrenceburg (SR 148 to SR 48)

Short-term Improvement:

- *Transportation System Management (TSM) Concept 11 – Eliminate Left Turn Lanes Except at Major Intersections and Replace TWLTL with Barrier Median*

Long-Term Improvements:

- *Intersection Improvement – US 50 at Wilson Creek Road*
- *Intersection Improvement – US 50 at Wal-Mart Entrance*

Segment 3 – Lawrenceburg (SR 48 to Arch Street)

Short-Term Improvements:

- *TSM Concept 2 – No Left Turns Allowed in Downtown Lawrenceburg*

Long-Term Improvements

- *Alternate 1 – On-Alignment Capacity Expansion (from 4 to 6 lanes) in Downtown Lawrenceburg*
- *Alternate 5 – One-Way Pair (Near North)*
- *Alternate 6 – One-Way Pair (Mid North)*

Segment 4 – Greendale (Arch Street to I-275)

Short-Term Improvements

- *Access Management Solutions – To be determined by Gateway Study*

Long-Term Improvements

- *Access Management Solutions – To be determined by Gateway Study*
- *Intersection Improvements – US 50 at I-275 Interchange*

SECTION 1
EXISTING CONDITIONS AND NEEDS ANALYSIS

1.01 STUDY AREA TERMINI

This US 50 Corridor Study is being completed as part of an Environmental Assessment (EA) for US 50 in Dearborn County, Indiana. The corridor termini are Dillsboro on the west end and the intersection of US 50 and State Route Road (SR) 1/Bellevue Avenue (I-275 Connector) on the east end. The study corridor passes near the City of Dillsboro and through the Cities of Aurora, Lawrenceburg, and Greendale and is approximately 18 miles in length. The general study area includes the southern portion of Dearborn County. Figure 1.01-1 shows the study corridor's location within Indiana. Figure 1.01-2 shows state and federal highways adjacent to the study corridor.

Consideration was given to extending the study corridor to include US 50 from the I-275 Connector to the Indiana-Ohio state line. The roadway characteristics, however, are quite different north of the I-275 Connector than they are south of it. Traffic volumes fall from nearly 35,000 vehicles per day to less than 14,000 and the cross section is reduced to four-lanes undivided from six-lanes with a center left turn lane. These considerations make the I-275 Connector a logical study corridor terminus.

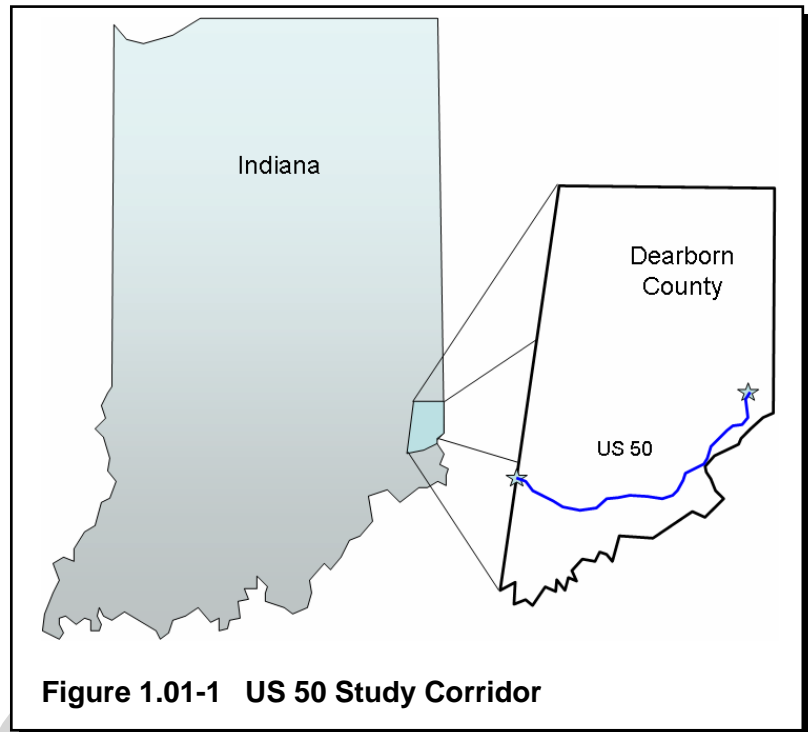


Figure 1.01-1 US 50 Study Corridor

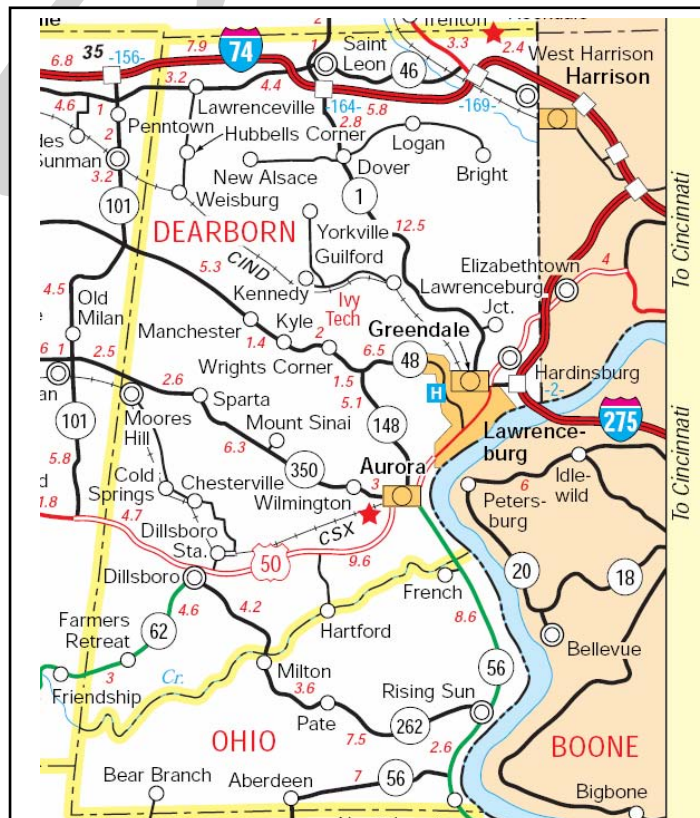


Figure 1.01-2 State Highways within Dearborn County

Source: Indiana DOT

1.02 SOCIOECONOMIC PROFILE

Dearborn County is located in southeastern Indiana, just outside of the Cincinnati, Ohio metropolitan area. SR 1 and SR 56 are the primary north-south routes while US 50 provides east-west mobility. US 50 connects Cincinnati to points west and southwest.

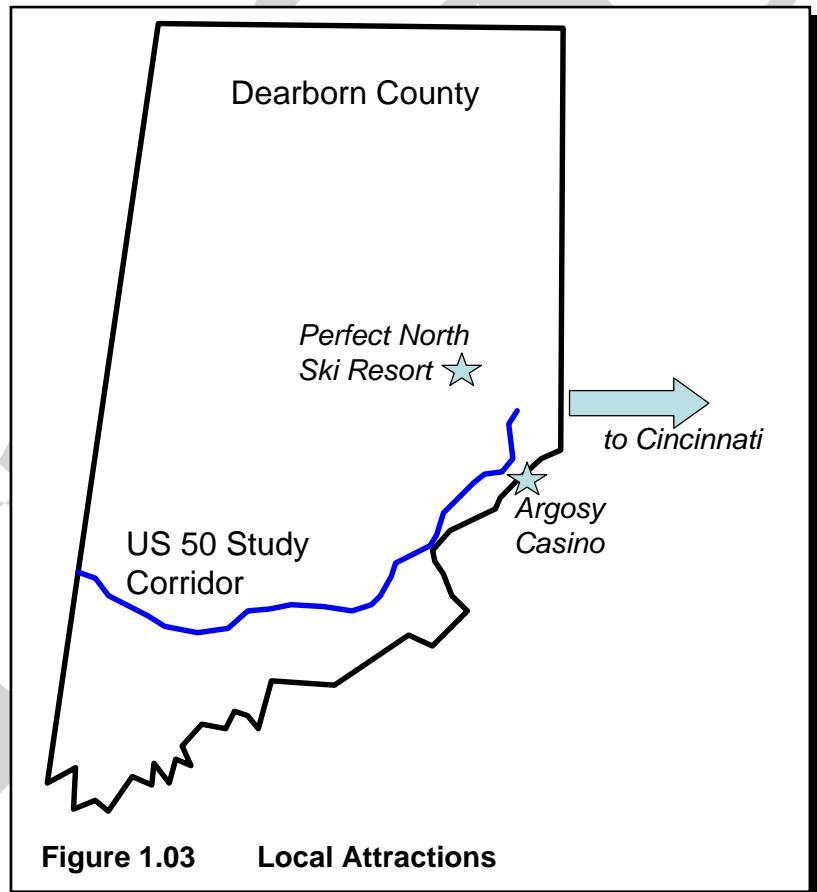
According to the US Census Bureau, Dearborn County had an estimated population of 48,583 in the year 2004 and experienced 18.7 percent growth in population between 1990 and 2000. This made Dearborn County the 12th fastest growing county in the state over that time period. Indiana's state population grew 9.7 percent from 1990 to 2000. According to the Dearborn County Transportation Assessment, March 2004, it is also one of the fastest growing counties within the Ohio-Kentucky-Indiana Regional Council of Governments' (OKI) planning area. Dearborn County's population age profile is similar to that of the State's overall.

The largest population centers in 2000 within Dearborn County were Lawrenceburg with 4,685 people, Greendale with 4,296 people, and Aurora with 3,965 people. The 1999 median household income in Dearborn County was \$48,899 compared to \$41,567 statewide. The County's per capita income in 1999 of \$20,431 was nearly identical to the state average. The County's unemployment rate was 3.3 percent in 2000, which is below the national and state averages. In 2001, there were 963 nonfarm employers in the County resulting in employment of 13,561 people. This employment number decreased 1.8 percent from 2000 to 2001.

1.03 GENERAL STUDY AREA TRANSPORTATION CHARACTERISTICS

There are no public airports or passenger rail facilities serving Dearborn County. Transit is minimal, although a privately operated, demand responsive ride service is available. Bicycle and pedestrian systems exist within the incorporated areas and, to some extent, along the Ohio River. The overall lack of transportation options, however, results in a dependence on automobile travel. This is verified by the fact that more than 70 percent of County households own two or more vehicles. Nearly 83 percent of commuters countywide drive to work alone, contributing to high US 50 traffic volumes.

Local attractions also result in increased transportation demand in Dearborn County. The Argosy Casino is located in Lawrenceburg off of US 50. It provides riverboat gambling and hotel facilities that attract an estimated 3.5 million visitors to the area annually. In the winter months, Perfect North Slopes offers skiing and snow tubing. The resort is located northeast of Greendale and attracts an estimated 150,000 to 175,000 patrons annually. Additionally, central Dearborn County is only 25 miles west of downtown Cincinnati, Ohio resulting in significant directional commuter traffic. Figure 1.03-1 shows the location of these attractions. Another nearby attraction is the Grand Victoria Casino and Resort, located on SR 56 southeast of Lawrenceburg; this attracts many visitors whom use the project corridor to reach this facility.



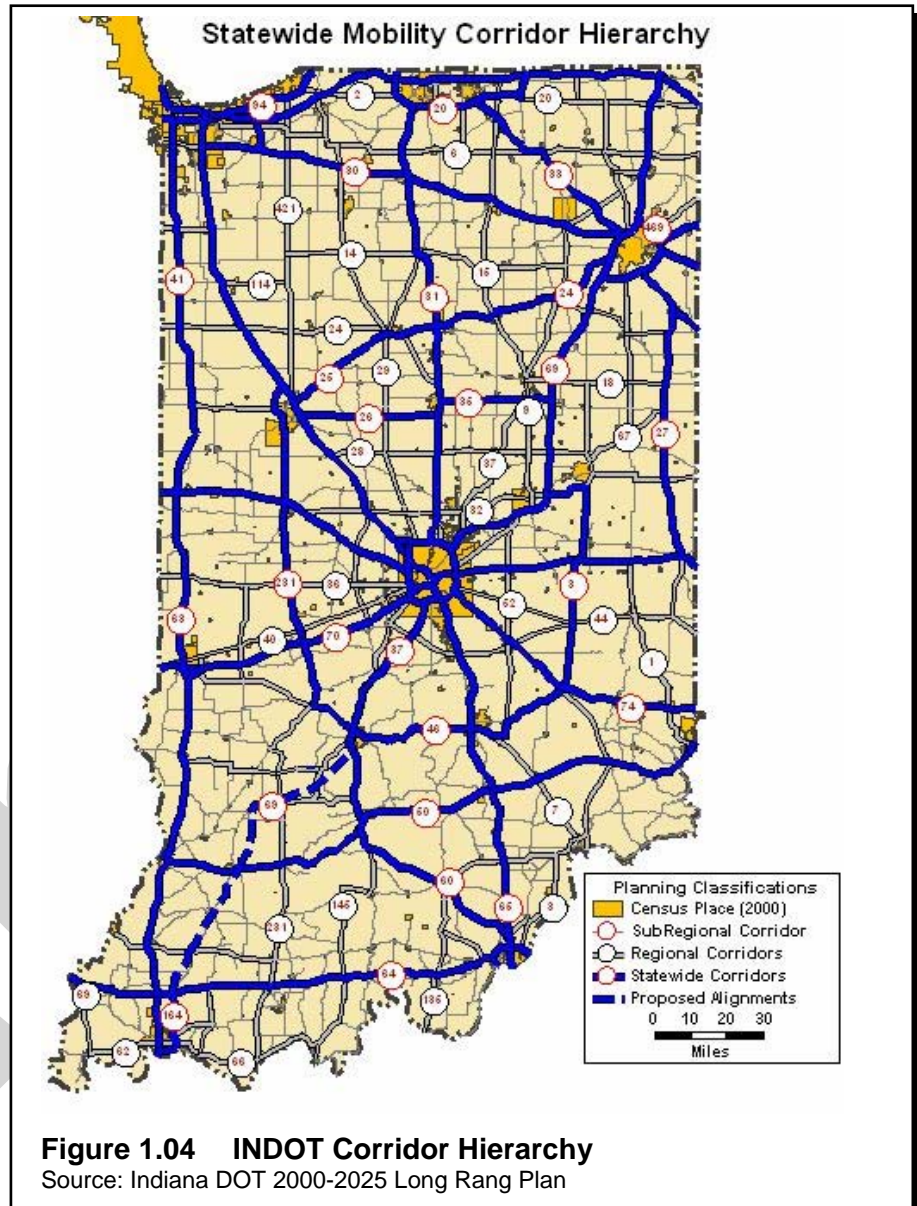
1.04 ROADWAY CHARACTERISTICS

A. Classification

In the Indiana Department of Transportation's (INDOT's) 2000-2025 Long Range Plan, US 50 is classified as a Statewide Mobility Corridor, as shown in Figure 1.04-1. These corridors connect major metropolitan areas of the state and neighboring states, provide regional access to cities and regions around the state, and play a vital role in the economic development of the state. Statewide Mobility Corridors are characterized by high design standards, high traffic speeds, free-flowing conditions, and large vehicular and truck traffic volumes. They are generally multilane divided highways with full-access control, where possible. This portion of US 50 is functionally classified as a Rural Principal Arterial and it is part of the National Highway System.

In addition to US 50, major routes through Dearborn County include I-74 and SR 1.

I-74 is classified as a Statewide Mobility Corridor in INDOT's 2000-2025 Long Range Plan, a Rural Interstate, and is part of the National Highway System. SR 1 is classified as a Regional Corridor in INDOT's 2000-2025 Long Range Plan. These corridors connect smaller cities and regions to Statewide Mobility Corridors and have mid-level design standards, high to moderate speeds, free-flowing conditions where practical, and moderate vehicular and truck traffic volumes. SR 1 is classified as a Rural Minor Arterial. It is not part of the National Highway System.



B. Existing Geometrics

US 50 is a traditional rural four-lane divided highway from the Dearborn/Ripley County line to just southwest of Aurora where the median narrows. Dedicated left-turn lanes or a two-way left-turn lane (TWLTL) are provided, depending on the density of access points, from southwest of Aurora to Argosy Parkway in Lawrenceburg. US 50 is a six-lane divided highway with dedicated left-turn lanes or a two-way left-turn lane configuration from Argosy Parkway to SR-1/I-275, the end of the study corridor.

Although detailed geometric data for US 50 was unavailable for use in this document, field visits suggest the horizontal and vertical curves along the study corridor generally conform to design standards for this type of facility. Shoulder width is deficient, ranging from 4 to 6 feet in the rural portions of the study corridor and from 0 to 4 feet in urban locations.

C. Existing Access Points

The number and spacing of access points along a highway has a direct impact on the road's capacity and safety. As access point density increases, crashes tend to increase and capacity decreases. Access point density on US 50 varies significantly with the highest density occurring between SR 148

Location	Access Point Density (Accesses/Mile)	Comments
County Highway 750 to County Line Road	14.7	Mostly Agricultural or Low Density Residential Access
County Line Road to SR 262	9.6	Mostly Agricultural or Low Density Residential Access
SR 262 to Mount Tabor Road/Hoffman Road	27.9	Mostly Agricultural or Low Density Residential Access
Mount Tabor Road/Hoffman Road to Cole Lane/Gatch Hill Road	27.5	Mostly Agricultural or Low Density Residential Access
Cole Lane/Gatch Hill Road to Dutch Hollow Road	29.4	Mostly Agricultural or Low Density Residential Access
Dutch Hollow Road to SR 350	5.2	Mostly Public Access Points (Local Streets)
SR 350 to SR 148	38.0	Exclusively Commercial and Public Access (Local Streets)
SR 148 to Wilson Creek Road	53.3	75 percent are Commercial Accesses
Wilson Creek Road to SR 48	31.0	Almost Exclusively Commercial Accesses
SR 48 to Argosy Parkway	34.5	Almost Exclusively Commercial Accesses
Argosy Parkway to SR 1/I-275	22.1	75 percent are Commercial Accesses

Table 1.04-1 Access Point Density on US 50

and Wilson Creek Road on the east side of Aurora. Table 1.04-1 shows the access point density on US 50.

As indicated in Table 1.04-1, these direct access points on US 50 tend to serve lower volume traffic generators (agricultural and low-density residential land uses) on the west side of Dearborn County and higher volume traffic generators (commercial land uses) on the east side.

D. Bridges

INDOT maintains an inventory of all bridges over 20 feet in length which includes safety and functionality information. The inventory includes the following data:

- Bridge Number: Number assigned to the structure in the Bridge Inspection Report.
- Facility Carried: The name of the road or highway that the bridge serves.
- Feature Intersected: The name of the water feature, valley, railroad, or road corridor that the bridge spans.
- Deficiencies: Bridges can be determined to be Structurally Deficient (SD) or Functionally Obsolete (FO).
- Sufficiency Rating: This number quantifies the need for replacement or repair and ranges from 0 to 100. It is based on a bridge's structural adequacy and safety, serviceability and functionality, and its degree of public importance. Any bridge that is determined to be SD or FO and carries a sufficiency rating below 50 is eligible for Federal Aid for replacement. Any bridge that is determined to be SD or FO and carries a sufficiency rating above 50 but below 80 is eligible for Federal Aid for rehabilitation.

Table 1.04-2 shows the INDOT inventory data for US 50 bridges within the study limits.

Bridge Number	Feature Intersected	Facility Carried	Sufficiency Rating	Functionally Obsolete	Structurally Deficient
050-15-02169	CSX RR and 2 Local Streets	US 50	78.7	No	No
050-015-1232	Wilson Creek	US 50	70.0	No	No
050-15-00210	Tanners Creek	US 50	42.2	Yes	No
Source: INDOT via <i>SR 101 Corridor Improvement Feasibility Study: Existing Conditions Report</i> by Bernardin, Lochmueller & Associates, Inc.					
Table 1.04-2 INDOT Inventory Data for US 50 Bridges Within the Study Limits					

According to the data, the Tanners Creek bridge in Lawrenceburg is FO and would qualify for Federal Aid. The City of Lawrenceburg is currently investigating improvement alternatives for this bridge and intends to locally fund the project.

1.05 EXISTING CRASH RATES

The study team obtained crash data for the US 50 study corridor from 2003 through 2005. In rural areas, crash rates are typically analyzed along corridors. They are expressed as the number of crashes per 100 million vehicle miles. Corridor crash rates on US 50 from the Ripley County line to

Location	Daily VMT	Total Crashes	Injury Crashes	Fatal Crashes	Total Rate	Injury Rate	Fatal Rate
County Highway 750 to County Line Road	14,250	10	1	0	64	6	0
County Line Road to SR 262	16,300	2	0	0	11	0	0
SR 262 to Mount Tabor Road/Hoffman Road	30,050	29	7	0	88	21	0
Mount Tabor Road/Hoffman Road to Cole Lane/Gatch Hill Road	21,850	20	5	0	84	21	0
Cole Lane/Gatch Hill Road to Dutch Hollow Road	12,200	29	7	0	217	52	0
Dutch Hollow Road to SR 350	22,350	50	9	0	204	37	0
SR 350 to SR 148	17,300	61	12	0	322	63	0
SR 148 to Wilson Creek Road	28,250	78	24	0	252	78	0
Statewide Rates for Rural Arterials, 1997-99	--	11,190	2,828	118	187	47	1.96
Crash Rates per 100 Million Vehicle Miles Crashes with Deer Excluded							

Table 1.05-1 Corridor Crash Rates 2003 to 2005

Wilson Creek Road are shown in Table 1.05-1a, listed from west to east. The portions of US 50 shown in **bold** indicate locations that experienced higher than average crash rates for this type of facility.

In general, the rural portions of US 50 east of Cole Lane and through the City of Aurora experienced overall and injury crash rates above the statewide average for Rural Principal Arterial highways. The most common contributing factors to crashes on US 50 include an animal or object in the road, following too closely, and failure to yield the right-of-way.

In urban areas, crash rates are typically analyzed at intersections. They are expressed as the number of crashes per one million vehicles entering the intersection. Intersection crash rates at locations, which traffic volume data was available for and a significant number of crashes occurred, are shown in Table 1.05-1b listed from west to east. Note that crash data for the

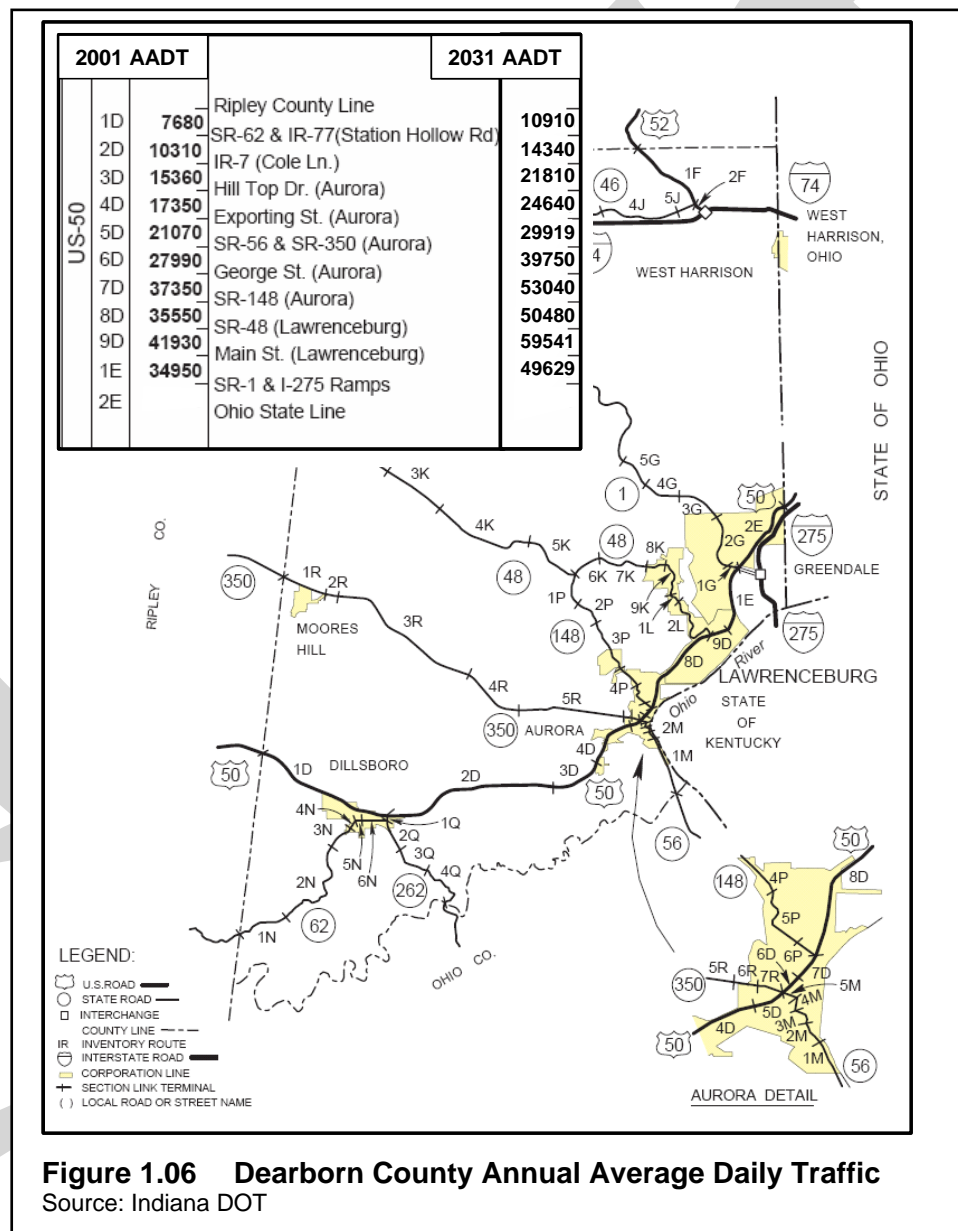
Location	Daily Entering Vehicles	Total Crashes	Injury Crashes	Fatal Crashes	Total Rate	Injury Rate	Fatal Rate
US 50 and SR 48	46,500	48	13	0	0.94	0.26	0.00
US 50 and Main Street	46,000	13	2	0	0.26	0.04	0.00
US 50 and Front Street	32,500	26	4	0	0.73	0.11	0.00
US 50 and Water Street	26,000	8	1	0	0.28	0.04	0.00
US 50 and Arch Street	32,000	72	20	0	2.05	0.57	0.00
INDOT Threshold for Intersections					2.00		
Crash Rates per Million Vehicles Entering the intersection							
Table 1.05-2 Intersection Crash Rates 2003 to 2005							

US 50/SR 1/Belleview Avenue intersection was not included in the data provided by INDOT.

An intersection crash rate of 2.0 crashes per million vehicles entering is often established by INDOT as the threshold above which safety improvements may be considered/investigated. The only intersection analyzed that had a crash rate above this threshold from 2003 to 2005 was US 50 and Arch Street. This intersection also had the highest injury crash rate of those studied, with an injury producing crash occurring every 55 days, on average. Rear-end crashes were the most common type (51 percent) with right-angle crashes occurring second most often (18 percent).

1.06 EXISTING TRAFFIC VOLUMES

Figure 1.06-1 shows the 2001 Annual Average Daily Traffic in Dearborn County on US 50. The daily traffic ranged from less than 8,000 vehicles per day near the Ripley County line to over 40,000 vehicles per day through downtown Lawrenceburg. Traffic volumes on US 50 in 2006 are likely to be 7 to 10 percent higher based on typical traffic growth trends.



and in regional travel patterns. Figure 1.06-1 also shows the forecasted traffic volumes along US 50 assuming 1.4 percent annual growth.

Commercial truck traffic is also a factor along the study corridor. The classification of US 50 as a statewide mobility corridor, and as a rural principal arterial suggest that it is a key route for commercial vehicle travel. Vehicle classification data from INDOT indicates that average daily truck traffic accounts for a significant portion of total traffic along the corridor. On the west end of the study corridor, single unit and tractor-trailer combinations make up 18 to 20 percent of total traffic. These percentages tend to decrease from west to east along the corridor, with commercial truck traffic accounting for 10 to 13 percent of all traffic between Aurora and Lawrenceburg. Additionally, turning movement counts in Lawrenceburg indicate that trucks on US 50 represent from 6 to 13 percent of total traffic during the AM peak hour, and from 2 to 4 percent during the PM peak hour.

1.07 EXISTING TRAFFIC OPERATIONS

Traffic operations were analyzed using two methodologies. First, for more rural portions of US 50 west of Lawrenceburg, overall corridor operations were analyzed using the Highway Capacity Software (HCS) Multilane module. This method of analysis considers the highway cross section (divided or undivided), lane width, lateral clearance, access point density, traffic volumes, type of terrain (level, rolling, or mountainous), and vehicle classification (percent heavy vehicles and percent recreational vehicles). The operational characteristics of highways are evaluated based on a Level of Service (LOS). Along a rural multilane highway the LOS rating is based on average travel speed and vehicle density (passenger cars per lane per mile). The LOS ratings range from LOS A (ideal conditions) to LOS F (volume exceeds highway capacity). LOS A indicates that the average vehicle travels at the highway's ideal free-flow speed. LOS F indicates that traffic volumes exceed the highway's theoretical capacity and major delays and safety concerns can be expected.

Within the Lawrenceburg-Greendale area, from the Tanner's Creek Parkway to SR 1 intersections, microsimulation was completed using Synchro/SimTraffic software. Microsimulation models individual vehicles on a simulated network that represents existing or proposed street conditions. Operations using this type of analysis are evaluated based on conditions at the intersections. LOS is based on average delay in seconds per vehicle for traffic entering the intersection. LOS A indicates that travelers will experience minimal average delay at an intersection (less than 10 seconds). LOS F indicates that the average delay is quite high (more than 50 seconds at an unsignalized intersection and 80 seconds at a signalized intersection).

LOS E is often considered to be the limit of acceptable delay and LOS F indicates a facility on which improvements are needed. Many communities and agencies establish LOS D as their minimum acceptable condition.

A. Existing Corridor Operations

Table 1.07-1 shows the results of the AM and PM corridor operations assessment of the western portion of the study corridor. All locations operate at LOS C or better during the AM and PM peak hours.

Location	Direction			
	Eastbound		Westbound	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
County Highway 750 to County Line Road	LOS A	LOS A	LOS A	LOS A
County Line Road to SR 262	LOS A	LOS A	LOS A	LOS A
SR 262 to Mount Tabor Road/Hoffman Road	LOS A	LOS A	LOS A	LOS A
Mount Tabor Road/ Hoffman Road to Cole Lane/Gatch Hill Road	LOS A	LOS A	LOS A	LOS A
Cole Lane/Gatch Hill Road to Dutch Hollow Road	LOS A	LOS A	LOS A	LOS A
Dutch Hollow Road to SR 350	LOS A	LOS A	LOS A	LOS A
SR 350 to SR 148 (Aurora)	LOS B	LOS B	LOS A	LOS B
SR 148 to Wilson Creek Road	LOS C	LOS B	LOS A	LOS C

Table 1.07-1 Existing Corridor LOS from HCS

B. Existing Intersection Operations

Table 1.07-2 shows the results of the AM and PM intersection operations assessment for the eastern segments of the corridor.

Location	Intersection Operations			
	AM Peak Hour		PM Peak Hour	
	Overall Intersection Ops	LOS F Movement(s)	Overall Intersection Ops	LOS F Movement(s)
US 50 and Wilson Creek Road	LOS A		LOS D	EBL (from US 50)
US 50 and Wal-Mart Entrance	LOS A		LOS C	
US 50 and Tanner's Creek Parkway	LOS B		LOS C	
US 50 and SR 48	LOS D		LOS E	EBL SBL, SBR
US 50 and Main Street	LOS B		LOS D	EBL NBL, NBT SBL
US 50 and Front Street	LOS A		LOS C	NBL
US 50 and Walnut Street	LOS A		LOS A	NBL SBL
US 50 and Arch Street	LOS A		LOS B	EBT WBT
US 50 and Argosy Parkway	LOS B		LOS C	
US 50 and Rudolph Way	LOS A		LOS A	
US 50 and Lorey Lane	LOS A		LOS B	
US 50 and SR 1/ Bellevue Ave.	LOS D	EBL, EBT NBL SBL	LOS F	EBT WBL NBL SBL, SBT

Note: NBL = Northbound Left NBT = Northbound Through NBR = Northbound Right
SBL = Southbound Left SBT = Southbound Through SBR = Southbound Right
EBL = Eastbound Left EBT = Eastbound Through EBR = Eastbound Right
WBL = Westbound Left WBT = Westbound Through WBR = Westbound Right

Table 1.07-2 Existing Intersection Operations from Synchro/SimTraffic

Microsimulation modeling suggests, and field observation confirms, that significant congestion exists today along the US 50 corridor at the Wilson Creek Road intersection and particularly within Lawrenceburg during periods of high traffic. While concerns during the AM peak hour are relatively minimal, PM peak hour traffic volumes result in significant queuing and delays for eastbound and westbound travelers. Field observation indicates that queuing on a typical weekday afternoon can block intersections and signal cycle failures are common for westbound traffic through downtown Lawrenceburg. Figure 1.07-3 shows a picture of heavy queuing taken on a Tuesday afternoon in late January, 2006.



US 50 and Main Street Looking West–Westbound US 50 Rolling Queue from the SR 48 Intersection Downstream Reaching the Main Street Intersection.



US 50 and Main Street looking East – Westbound US 50 Rolling Queue Reaching the Front Street Intersection Upstream.

Figure 1.07 Weekday Afternoon Field Observations

Existing volume to capacity (V/C) ratios from Synchro modeling also indicate that PM peak-hour traffic congestion is to be expected. At the SR 1 intersection, the northbound left-turn and westbound left-turn movement demand is greater than the traffic signal's capacity for these movements during the heaviest periods within the peak hour. When this condition exists, queues will grow longer after each successive signal cycle until the traffic demand falls below the signal's capacity. The V/C ratios for the eastbound left-turn and westbound through movements at SR 48 and Wilson Creek Road are also greater than 1.0 at times under existing conditions. This is often a strong indicator of the need to consider intersection capacity improvements.

The topography surrounding Lawrenceburg limits opportunities for bypass corridors. Investigations are underway, and will be continued in the US 50 EA, to identify a suitable route to relieve US 50 through downtown Lawrenceburg. The corridor's importance to regional truck traffic requires that any bypass route considered be designed to accommodate heavy commercial vehicles (through limiting longitudinal grades, providing adequate lane width, etc.).

In addition to regional mobility, local access to services is limited by the fact that the only crossing of Tanner's Creek on the west side of Lawrenceburg is the US 50 bridge. Should an incident, bridge repairs, or a weather event force this crossing to be closed, no suitable alternative route across Tanner's Creek currently exists. This is a particular concern since a regional hospital is located west of Tanner's Creek, while the majority of Lawrenceburg and Greendale residents live east of it. An additional crossing is desirable to provide system redundancy.

1.08 FUTURE NO-BUILD CONDITIONS

A. Projected Corridor Operations

Table 1.08-1 shows the results of the AM and PM corridor operations assessment on western US 50 using forecasted 2030 traffic and the existing transportation corridor. Forecasted volumes were based on traffic projections provided by the Indiana Department of Transportation and confirmed with travel demand modeling of the US 50 corridor. All locations operate at LOS C or better during the AM and PM peak hours except one. Westbound traffic during the PM peak hour is forecasted to experience LOS D conditions in 2030 between Wilson Creek Road and SR 148. Consolidation of access points and the addition of traffic signals at key intersections may be needed to address this afternoon congestion.

Location	Direction			
	Eastbound		Westbound	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
County Highway 750 to County Line Road	LOS A	LOS A	LOS A	LOS A
County Line Road to SR 262	LOS A	LOS A	LOS A	LOS A
SR 262 to Mount Tabor Road/Hoffman Road	LOS A	LOS A	LOS A	LOS A
Mount Tabor Road/ Hoffman Road to Cole Lane/Gatch Hill Road	LOS A	LOS A	LOS A	LOS A
Cole Lane/Gatch Hill Road to Dutch Hollow Road	LOS A	LOS A	LOS A	LOS B
Dutch Hollow Road to SR 350	LOS A	LOS A	LOS A	LOS B
SR 350 to SR 148 (Aurora)	LOS C	LOS B	LOS B	LOS C
SR 148 to Wilson Creek Road	LOS C	LOS C	LOS B	LOS D

Table 1.08-1 Future (2030) No-Build Corridor LOS from HCS

B. Projected Intersection Operations

Table 1.08-2 shows the future no-build results for AM and PM intersection operations assessment.

	Intersection Operations			
	AM Peak Hour		PM Peak Hour	
	Overall Intersection Operations	LOS F Movement(s)	Overall Intersection Operations	LOS F Movement(s)
US 50 and Willson Creek Road	LOS A		LOS F	EBL, EBT
US 50 and Wal-Mart Entrance	LOS A		LOS F	EBL, WBL, WBT, WBR
US 50 and Tanner's Creek Parkway	LOS C		LOS D	
US 50 and SR 48	LOS E	EBL	LOS F	EBT, EBL, WBT, WBR, SBL
US 50 and Main Street	LOS A		LOS F	EBL, NBL, NBT, NBR, SBL, SBT, SBR
US 50 and Front Street	LOS A		LOS E	WBL, NBL, NBT, NBR, SBL, SBT, SBR
US 50 and Walnut Street	LOS B		LOS B	NBL, SBL
US 50 and Arch Street	LOS B		LOS B	EBL, WBL
US 50 and Argosy Parkway	LOS C	NBL	LOS C	
US 50 and Rudolph Way	LOS B		LOS A	
US 50 and Lorey Lane	LOS B		LOS B	

Note: NBL = Northbound Left NBT = Northbound Through NBR = Northbound Right
SBL = Southbound Left SBT = Southbound Through SBR = Southbound Right
EBL = Eastbound Left EBT = Eastbound Through EBR = Eastbound Right
WBL = Westbound Left WBT = Westbound Through WBR = Westbound Right

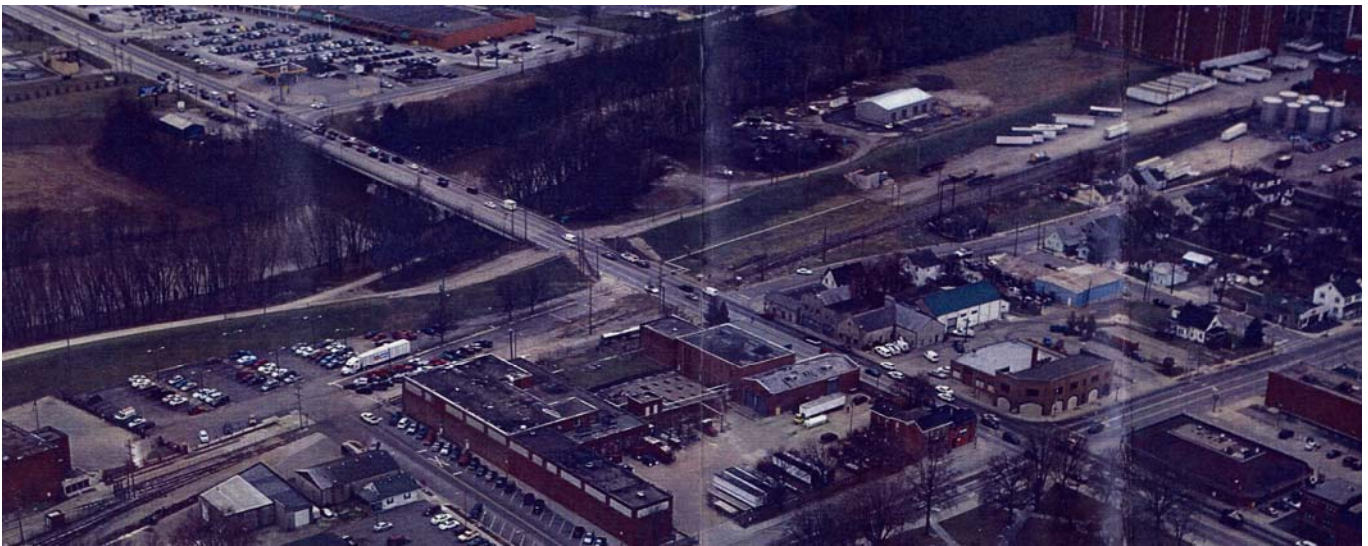
Table 1.08-2 Future (2030) No-Build Intersection Operations from Synchro/SimTraffic

Microsimulation modeling indicates that congestion and queuing concerns will continue to worsen as traffic volumes increase. As traffic demand further exceeds the capacity of the signalized intersections on US 50, periods of severe delays and queuing will grow in length. Ultimately, travelers that have the option will change their behavior by traveling outside of peak traffic periods, traveling via alternate routes, traveling via alternative modes (if available), and/or eliminating nonessential trips.

1.09 RELATED STUDIES

A. Proposed Eads Parkway (US 50) Bridge over Tanners Creek Study

The City of Lawrenceburg is investigating adding a second bridge on US 50 over Tanners Creek between SR 48 and Main Street. American Consulting, Inc. (ACE) has completed a preliminary analysis of alternatives and has developed a proposed alignment for the crossing. INDOT is currently reviewing this study and the impact that the proposed project would have on US 50 operations and mobility. Figure 1.09-1 shows the current proposed alignment.



Existing US 50 Configuration over Tanners Creek looking Northwest from Downtown Lawrenceburg (ACE)

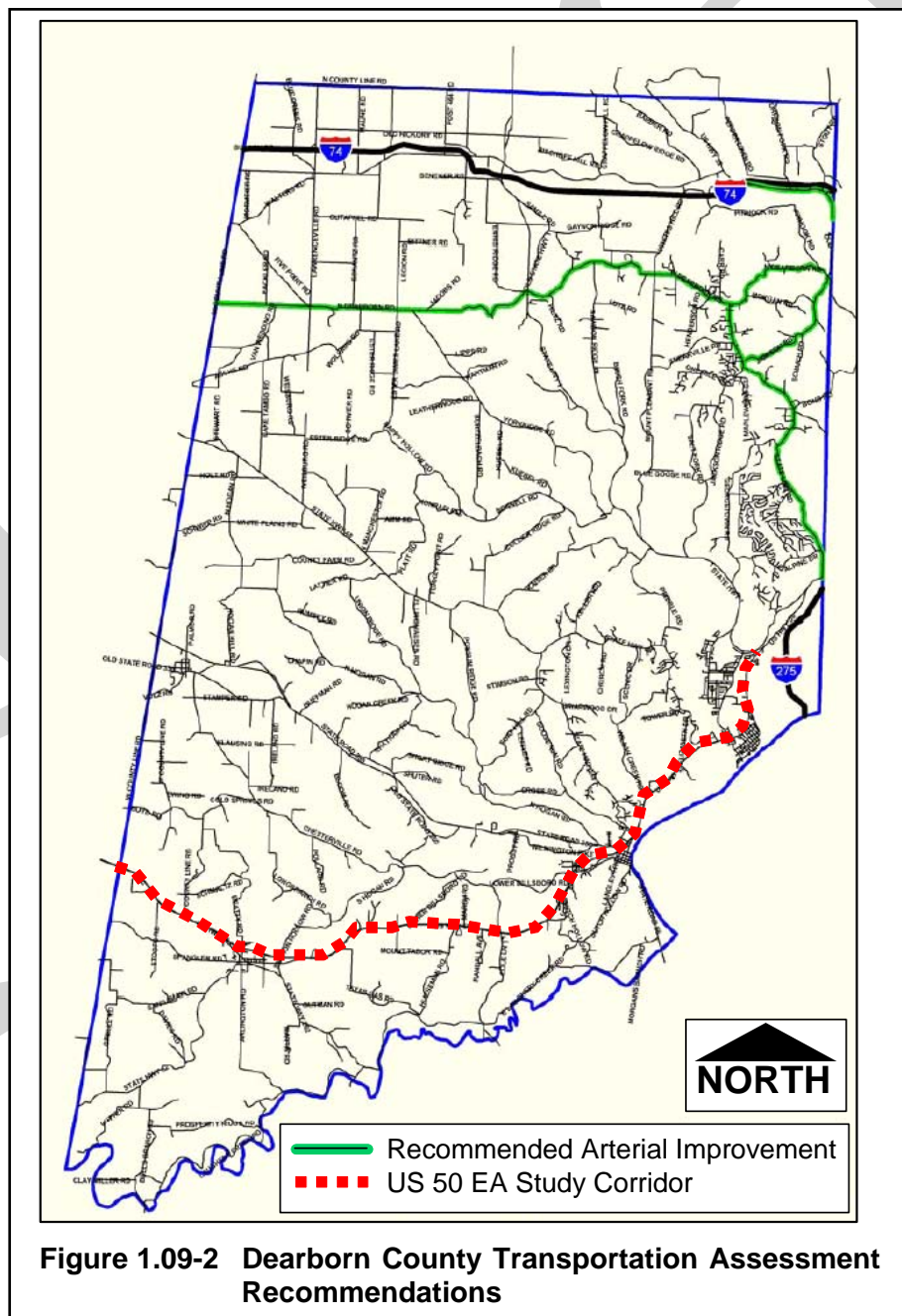


Proposed US 50 Configuration (ACE)

Figure 1.09-1 City of Lawrenceburg Proposed Bridge on US 50 over Tanners Creek

B. Dearborn County Transportation Assessment

Completed in March 2004 by Parsons Brinckerhoff, Inc., this study provides an inventory of existing transportation facilities in Dearborn County, assesses the physical condition and capacity of area roadways, and develops recommendations for improvements to the County and Local systems. Figure 1.09-2 shows the arterial roadways on which improvement projects are recommended to bring the roadway up to typical design standards in terms of lane and shoulder width. These routes include Jamison Road, North Dearborn Road, North State Street, Old US 52, and State Line Road.



This on-going study is being completed by Strand Associates, Inc. The project investigates alternative routes intended to serve as a reliever to the congested Lawrenceburg portion of US 50. Figure 1.09-3 shows the routes considered.



D. Regional Rail Plan

Prepared by Strand Associates, Inc.®

County, Ohio, are working together to plan for a regional passenger rail transit system in Hamilton County and the Greater Cincinnati area. Western Corridor transit options being considered include a commuter rail line using RailAmerica's existing CIND Line along River Road serving Lawrenceburg. Investigations are ongoing.

E. SR 101 Corridor Improvement Feasibility Study

INDOT completed the National Environmental Policy Act (NEPA) process on SR 101 in December 2002. The study sought to identify options for improving north-south mobility in southeastern Indiana. The study concluded that the most feasible alternative was a new roadway between Markland Dam and US 50 to I-74. The study also recommended a phased approach to project implementation. Phase 1 included evaluation of opportunities for short-term, low-cost improvements. Phase 2 included design and construction of the southern portion of the preferred alternative. Phase 3 included design and construction of the northern portion of the preferred alternative.

In August 2004, INDOT completed a position paper regarding the recommendations of the SR 101 study. INDOT has elected not to include the recommended improvements in Indiana's 2030 Long-Range Transportation Plan, choosing instead to focus on improvements to SR 129 and the SR 56/SR 156 connection between US 50 and SR 101 at the Markland Dam.

F. Gateway Study

The Southeastern Indiana Gateway: US 50 Transportation and Land Use Plan is an investigation sponsored by The Ohio-Kentucky-Indiana Regional Council of Governments (OKI) and Dearborn County, completed by M.E. Companies. This study is a companion study to the US 50 Corridor Study and is evaluating current land use and access management along US 50. The purpose of the study is to identify and implement solutions to chronic traffic congestion on US 50 and develop a plan for land use, access management, and street layout that increases safety and the overall efficiency of the corridor. In conjunction with proposed improvements from this US 50 EA/Corridor Study, the Gateway study is intended to coordinate proposed US 50 improvements to maximize the economic potential of US 50. Recommendations from this study were provided in an Access Management Plan, which should be evaluated by INDOT for inclusion as short- and long-term improvements to various segments of the corridor. Although specific access management solutions recommended by the Gateway Study are not included in this report, the recommendations from the Gateway study are generally listed as recommended alternatives in this EA/Corridor Study.

G. OKI 2030 Regional Transportation Plan

The Regional Transportation Plan was prepared by the Ohio-Kentucky-Indiana Regional Council of Governments (OKI). The plan serves as a blueprint for transportation projects in the greater Cincinnati region through the year 2030 by addressing future transportation needs created by growth and

development. At the same time, it responds to Federal Highway Administration and Clean Air Act requirements that call for mitigating congestion, addressing air quality and other environmental, social and financial issues.

The OKI Plan has identified two improvement projects within the US 50 Corridor. One project considers access management and beautification of US 50 from Argosy Parkway to I-275, and the other will provide improvements to the intersection of US 50 and Sycamore Road. Both projects will help enhance this section of US 50, and are independent of projects recommended by this study.

SECTION 2
PURPOSE AND NEED

2.01 PURPOSE

The Indiana Department of Transportation (INDOT) has evaluated the state highway system relative to levels of passenger vehicular traffic as well as freight movement. Creating efficient connectors between major population and industrial areas within the state and across its borders is necessary to encourage economic growth and fiscal health for Indiana. As part of the evaluation, INDOT has developed classifications of the state highway system in order to prioritize the needs and importance of each corridor. A three-tiered structure has been developed based on levels of use and connectivity. Statewide Mobility Corridors are at the apex of the structure. These corridors are identified as being able to provide high-speed, safe, free flowing arterial connections between metropolitan areas within the state and to surrounding states. They are also major freight movers and part of the State's goal to connect all areas with populations of 25,000 or more. Statewide Mobility Corridors should offer upper level design standards, carry longer distance commuter traffic effectively, and bypass congested areas.

US 50 has been designated as a Statewide Mobility Corridor by INDOT. The purpose of this study is to evaluate that portion of US 50 from Dillsboro to I-275 in Dearborn County in terms of the ideal characteristics of a Statewide Mobility Corridor as determined by INDOT to identify those portions of the corridor that fail to meet the mobility corridor guidelines, and to identify potential transportation projects to improve poorly functioning elements of the corridor.

2.02 BACKGROUND

Dearborn County is primarily rural; however, the eastern portion of the County in the Aurora/Greendale/Lawrenceburg area exhibits urban characteristics. Single passenger vehicular travel to work is the dominant method of commuting. Public transit is basically nonexistent; there is no passenger rail service, nor any public use airports within the County limits. Dearborn County residents rely almost exclusively on automobile travel, elevating the need for current roadways to provide adequate levels of service. The County's accessibility to the Greater Cincinnati area continues to fuel the urbanization of the eastern portion of the corridor area, raising the level of commuter traffic. Tourist traffic also continues to grow with the success of the nearby Argosy Casino as well as Perfect North Slopes. This study will identify corridor needs and identify and evaluate alternatives to meet those needs.

2.03 NEED

One of the mandates of INDOT's Statewide Long-Range Multimodal Transportation Plan is to maintain existing facilities and service, which includes appropriate expansion of capacity to ensure the effective transportation of people, goods and freight. Safety and the acknowledgement that an effective transportation system is an integral part of the economic security of the State are also key elements.

The need for the project will be broken down into four categories including (1) congestion, (2) safety, (3) Tanners Creek crossing and (4) US 50's role as a Statewide Mobility Corridor. For ease of presentation the Corridor is divided into four segments:

- Segment 1–Dillsboro to Aurora (SR 262 to SR 148)
- Segment 2–Aurora to Lawrenceburg (SR 148 to SR 48)
- Segment 3–Lawrenceburg (SR 48 to Arch Street)
- Segment 4–Greendale (Arch Street to I 275)

A. Congestion

Highways and intersections are typically evaluated in terms of vehicular traffic operations based on Level of Service (LOS). The LOS ratings range from A, indicating free flowing conditions with little or no congestion, to F, which signifies failure of the transportation facility. LOS D is often considered the threshold of acceptable operations, with LOS E and LOS F representing unacceptable conditions.

Existing conditions analysis shows that Segment 1 functions adequately. Traffic moves smoothly and the roadway generally appears to conform to design standards for a Rural Arterial classification. The westernmost section of Segment 1 serves mostly agricultural or low density residential areas, becoming more commercialized as the corridor reaches Aurora. Forecasted traffic levels for 2030 indicate that Segment 1 should continue to operate with little or no congestion through both the AM and PM peak hours.

Segment 2 also currently functions adequately. The most congested location within Segment 2 is the SR 148 to Wilson Creek Road area. The existing Level of Service (LOS) for this section during the PM peak hour is LOS C. Analysis using 2030 traffic volume forecasts predicts operations in this section to decrease to LOS D.

Segment 3, from SR 48 to Arch Street, experiences significant congestion at the US 50 and SR 48 intersection during the existing AM peak hour, while other locations function adequately. The existing PM peak hour sees more congestion at all locations and significant friction for turning movements across the highway. The US 50/SR 48 intersection currently operates at LOS E overall. Forecasted traffic volumes will create overall failure of the SR 48 and Main Street intersections during the PM peak hour in 2030. Queuing will also become a serious concern causing intersection blockage and impairing corridor safety. This intersection is currently being relocated west of the existing intersection as part of

a separate project for realignment of US 48. The expected construction completion date for the new intersection is June 2007.

Segment 4 currently operates adequately with the exception of the US 50/SR 1/I-275 (Bellevue Road) intersection. This intersection operates at LOS F overall during the PM peak hour. Vehicles making turns at this intersection experience long queues and traffic signal cycle failure (waiting through more than one signal cycle before getting through the intersection). Future traffic levels should be able to function adequately across Segment 4, except for the US 50/SR 1/I-275 intersection which will experience extreme delays and queuing due to congestion.

B. Safety

The western-most section of Segment 1 experiences no major safety issues. However, crash data shows that total accident rates rise above the statewide average while moving east from Coles Lane in Segment 1 to Wilson Creek Road in Segment 2. The injury crash rates are also above the statewide average throughout much of the Segment 2 portion of US 50.

Segment 3, which contains the urbanized area of Lawrenceburg from SR 48 to Arch Street, had intersection crash rates below the state threshold for considering safety improvements. The US 50 and SR 48 intersection had the greatest number of both total crashes and injury crashes.

Segment 4 has one intersection with an overall crash rate that warrants attention. The US 50/Arch Street intersection currently experiences 2.05 crashes per million vehicles entering the intersection. INDOT typically considers a rate above 2.0 as the threshold above which safety improvements should be considered. No crash data was available for the US 50/SR 1/Bellville Road intersection, so it is unknown if this intersection also poses a safety risk for the corridor. Although the total and injury crash rates are higher than average along some portions of US 50, there were no fatalities along the study corridor from 2003 through 2005.

C. Tanner's Creek Bridge

Tanner's Creek Bridge is located on the west side of Lawrenceburg. It has received a sufficiency rating of less than 50, classifying it as functionally obsolete. The bridge is eligible for Federal funding for replacement. The bridge provides the only major crossing over Tanner's Creek for the county. The lack of alternative routes hinders the response times of emergency vehicles. A major accident or construction on or near the bridge could severely limit mobility for all travelers on US 50 and would be a major concern for emergency responders. The City of Lawrenceburg has significant concerns regarding safety and alternate routes if the bridge is out of service and is currently reviewing options to replace the structure or provide an additional crossing.

In order to fulfill the mandate to provide a safe and effective transportation system, various alternative solutions to alleviate congestion, improve safety, and provide system redundancy by constructing a parallel crossing over Tanner's Creek are being examined through a study being conducted by

American Consulting, Inc. (ACE). A preliminary analysis of alternatives and a proposed alignment for the crossing have been developed. INDOT is currently reviewing this study and the impact that the proposed project would have on US 50 operations and mobility.

It is important to recognize that operations and travel demand modeling of proposed alternatives for this study presume that the new Tanner's Creek Bridge project is committed to be built. The study of new bridge alternatives is currently being investigated by American Consulting Engineers (ACE). Alternatives proposed in this study would require revision to include an additional crossing over Tanner's Creek if this project does not advance to construction.

D. Roll as Statewide Mobility Corridor

US 50 is a Statewide Mobility Corridor, demonstrating its significance to vehicular and commercial truck movement through the State. The westernmost section of the US 50 Corridor from Dillsboro to Aurora appears to function adequately in regard to traffic operations. Future vehicular volume forecasts fail to produce a significant level of congestion in the Dillsboro area. However, safety issues are currently evident in several segments of the Corridor as expressed by the higher than average crash data in Segments 1, 2, and 4. Existing volume-to-capacity ratios present strong evidence that the eastern section of the US 50 Corridor cannot provide high speed, free-flowing conditions, efficiently service the large volume of through traffic, or provide adequately for heavy commercial traffic flow.

Forecasts of future traffic volumes indicate even greater periods of congestion and a further reduction in the ability of this section of US 50 to provide adequate mobility between neighboring urban communities. The only major crossing of Tanner's Creek is functionally obsolete and the local population has expressed a desire to provide an additional crossing to address both congestion and the lack of system redundancy.

SECTION 3
ALTERNATIVES PRESENTATION AND SCREENING

3.01 OVERVIEW

After establishing Purpose and Need, project alternatives were developed to address the safety, congestion and Statewide Mobility Corridor needs. Alternatives were suggested through coordination with a Community Advisory Committee (CAC), Public Involvement (PI) Meeting input, and through scoping discussions with INDOT and FHWA. The alternatives can generally be grouped in three conceptual categories:

- **“No-Build”**
The proposal to do nothing within the corridor was evaluated for merit. These alternatives presume that no additional actions will be taken, aside from existing committed projects on the State or local roadway systems.
- **Short-term Improvements**
Short-term improvements include modifications such as elimination or restriction of turn lanes, signal changes, and other access and traffic management controls.
- **Long-term Improvements**
These alternatives include new bypass routes, one-way pairs, on-alignment capacity expansions and major intersection improvements.

Operations modeling using Synchro/SimTraffic was used to provide future corridor operations assessment on US 50 using forecasted 2030 traffic and the existing transportation corridor. Similar modeling was also used to evaluate overall intersection movements and individual movements within each major intersection. Forecasted traffic volumes used in Synchro modeling were based on traffic projections provided by the Indiana Department of Transportation and confirmed with travel demand modeling of the US 50 corridor. Travel demand modeling, completed by Wilbur Smith Associates was also used to evaluate select project alternatives.

Alternatives were each evaluated against the purpose and need of the project along with other considerations. Other methods to evaluate alternatives included CAC and PI meetings, state and federal agency comments, right-of-way requirements, cost, and preliminary evaluation of potential impacts to wetlands, historical sites, and possible hazardous waste sites. Tables summarizing these impacts follow.

A summary of purpose and need measures is provided in Table 3.01-1. Table 3.01-2 provides a summary of R/W requirements, estimated number of disturbed structures, wetland impacts, historic impacts, and estimated costs. The results of projected corridor operations are provided in Tables 3.01-3 and 3.01-4. These results will be discussed in greater detail within each Segment alternatives discussion.

Alternate	Congestion	Safety	Tanners Creek Bridge	Mobility Corridor
Alternate 1 - On-Alignment Capacity Expansion in Downtown Lawrenceburg	2030 LOS - Acceptable	Improves Arch Street	N/A	Enhances Corridor
TSM Concept 2 - No Left Turns Allowed in Downtown Lawrenceburg	2030 LOS - Not Acceptable	No Improvements	N/A	No Improvement
TSM Concept 3 - Reversible Lanes in Downtown Lawrenceburg	2030 LOS - Not Acceptable	No Improvements	N/A	Minor Improvement
Alternate 4 - One-Way Pair (South)	2030 LOS - Acceptable	Improves Arch St.	N/A	Enhances Corridor
Alternate 5 - One-Way Pair (Near North)	2030 LOS - Acceptable	Improves Arch St.	N/A	Enhances Corridor
Alternate 6 - One-Way Pair (Mid North)	2030 LOS - Acceptable	Improves Arch St.	N/A	Enhances Corridor
Alternate 7 - One-Way Pair (Far North)	2030 LOS - Acceptable	Improves Arch St.	N/A	Enhances Corridor
Alternate 8 - SR 1 to SR 48 Connector (Nowlin Avenue)	2030 LOS - Not Acceptable	Minor Improvement to Arch Street	N/A	Minor Improvement
Alternate 9 - SR 1 to SR 48 Connector (Indiana Glass)	2030 LOS - Not Acceptable	Minor Improvement to Arch Street	N/A	Minor Improvement
Alternate 10 - New Ohio River Bridge (US 50 to KY 20)	2030 LOS - Acceptable	Improves Arch St.	N/A	Enhances Corridor
TSM Concept 11 - Eliminate Left Turn Lanes Except at Major Intersections and Replace TWLTL with Barrier Median	2030 LOS - Acceptable	Improves SR 350 to SR 148, Eliminates Non-Signalized Left Turns	N/A	Enhances Corridor
Wilson Creek Road Intersection	2030 LOS - Acceptable	N/A	N/A	Minor Improvement
Wal-Mart Entrance	2030 LOS - Acceptable	N/A	N/A	Minor Improvement
I-275 Intersection	2030 LOS - Acceptable	N/A	N/A	Minor Improvement

Table 3.01-1 Summary of Purpose and Need Measures

Alternate	New R/W Area	No. Bldg. Disturbed	Wetland Disturbed (acres)	Historic Structures/ Districts	Cost (\$) Millions
Alternate 1 - On-Alignment Capacity Expansion in Downtown Lawrenceburg	4.0	10 to 15	0.0	10-15 Sites/ 2 Districts	20
TSM Concept 2 - No Left Turns Allowed in Downtown Lawrenceburg	0.0	0	0.0	0 Sites/ 0 Districts*	0.4
TSM Concept 3 - Reversible Lanes in Downtown Lawrenceburg	1.2	5 to 10	0.0	0 Sites/ 0 Districts	2.4
Alternate 4 - One-Way Pair (South)	20.0	30 to 40	3.0	20-30 Sites/ 2 Districts	45
Alternate 5 - One-Way Pair (Near North)	1.5	4 - 5	0.3	20-25 Sites/ 2 Districts	24
Alternate 6 - One-Way Pair (Mid North)	6.2	5 to 10	0.0	20-25 Sites/ 2 Districts	25
Alternate 7 - One-Way Pair (Far North)	16.5	35 to 40	1.2	20-30 Sites/ 2 Districts	47
Alternate 8 - SR 1 to SR 48 Connector (Nowlin Avenue)	70	5 to 10	0.6	1-3 Sites/ 0 Districts	37
Alternate 9 - SR 1 to SR 48 Connector (Indiana Glass)	71	5 to 10	0.6	1-3 Sites/ 0 Districts	36
Alternate 10 - New Ohio River Bridge (US 50 to KY 20)	120	45 to 50	8.0	Unknown Sites/ 1 District	750
TSM Concept 11 - Eliminate Left Turn Lanes Except at Major Intersections and Replace TWLTL with Barrier Median	0.0	0	0.0	0 Sites/ 2 Districts	5.0
Wilson Creek Road Intersection	2.5	0	0.3	0 Sites/ 0 Districts	8.4
Wal-Mart Entrance	2.0	0	0.0	0 Sites/ 0 Districts	6.7
I-275 Intersection	4.0	2 - 3	0.0	0 Sites/ 0 Districts	28

* There will likely be secondary impacts to two Historic Districts

Table 3.01-2 Summary of Environmental and Cultural Considerations

Location	Direction			
	Eastbound		Westbound	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
County Highway 750 to County Line Road	LOS A	LOS A	LOS A	LOS A
County Line Road to SR 262	LOS A	LOS A	LOS A	LOS A
SR 262 to Mount Tabor Road/Hoffman Road	LOS A	LOS A	LOS A	LOS A
Mount Tabor Road/ Hoffman Road to Cole Lane/Gatch Hill Road	LOS A	LOS A	LOS A	LOS A
Cole Lane/Gatch Hill Road to Dutch Hollow Road	LOS A	LOS A	LOS A	LOS B
Dutch Hollow Road to SR 350	LOS A	LOS A	LOS A	LOS B
SR 350 to SR 148 (Aurora)	LOS C	LOS B	LOS B	LOS C
SR 148 to Wilson Creek Road	LOS C	LOS C	LOS B	LOS D

Table 3.01-3 Future (2030) No-Build Corridor LOS from Highway Capacity Software

Location	Intersection Operations			
	AM Peak Hour		PM Peak Hour	
	Overall Intersection Operations	LOS F Movement(s)	Overall Intersection Operations	LOS F Movement(s)
US 50 and Wilson Creek Road	LOS A		LOS F	EBL, EBT
US 50 and Wal-Mart Entrance	LOS A		LOS F	EBL, WBL, WBT, WBR
US 50 and Tanner's Creek Parkway	LOS C		LOS D	
US 50 and SR 48	LOS E	EBL	LOS F	EBT, EBL, WBT, WBR, SBL
US 50 and Main Street	LOS A		LOS F	EBL, NBL, NBT, NBR, SBL, SBT, SBR
US 50 and Front Street	LOS A		LOS E	WBL, NBL, NBT, NBR, SBL, SBT, SBR
US 50 and Walnut Street	LOS B		LOS B	NBL, SBL
US 50 and Arch Street	LOS B		LOS B	EBL, WBL
US 50 and Argosy Parkway	LOS C	NBL	LOS C	
US 50 and Rudolph Way	LOS B		LOS A	
US 50 and Lorey Lane	LOS B		LOS B	

Table 3.01-4 Future (2030) No-Build Intersection Operations from Synchro/SimTraffic

3.02 SEGMENT 1 – DILLSBORO TO AURORA (SR 262 TO SR 148)

This westernmost Segment encompasses a length of 9.4 miles from SR 262 on the west end to SR 148 on the east end.

Existing conditions analysis shows that Segment 1 functions adequately. Traffic moves smoothly and the roadway generally appears to conform to design standards for a Rural Arterial classification.

The westernmost section of Segment 1 serves mostly agricultural or low-density residential areas, becoming more commercialized as the corridor reaches Aurora.

Operations modeling using HCS was used to provide corridor operations assessment on western US 50 using forecasted 2030 traffic and the existing transportation corridor. Forecasted volumes were based on traffic projections provided by the Indiana Department of Transportation and confirmed with travel demand modeling of the US 50 corridor.

Forecasted traffic levels for 2030 indicate that Segment 1 should continue to operate with little or no congestion through both the AM and PM peak hours. Table 3.01-3 provides operations modeling results for the western corridor of US 50. Based on current and projected acceptable Level of Service (LOS) and lack of safety concerns in this predominantly rural section of the project, no purely construction alternatives are being advanced for this Segment.

Access management solutions are recommended for short- and long-term improvements for this Segment. Such improvements are expected to improve safety and thus, satisfy purpose and need. Such management solutions are currently being investigated by the Gateway Study being prepared for OKI and Dearborn County by ME Companies. The specific purpose of the Gateway Study is to evaluate land use and access control along the US 50 corridor. Many of the recommendations from this companion study will be able to be implemented as short and long-term solutions to congestion, as well as lowering the existing crash rates at various locations across the corridor, especially Segment 1, which does not appear to warrant a significant construction alternative.

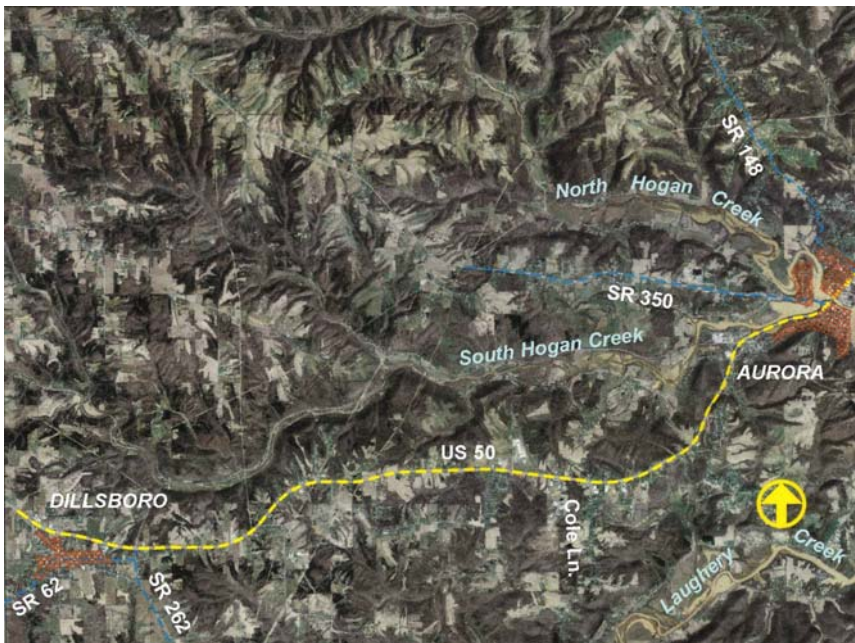


Figure 3.02 Segment 1 – Dillsboro to Aurora

3.03 SEGMENT 2 – AURORA TO LAWRENCEBURG (SR 148 TO SR 48)

Segment 2, defined by the intersection of US 50 with SR 148 on the west end to SR 48 on the east end, includes a total of 3.0 miles and is shown in Figure 3.03. As discussed in the Purpose and Need Section of this report, this Segment currently functions adequately. The most congested location within Segment 2 is the SR 148 to Wilson Creek Road area. The existing Level of Service (LOS) for this section during the PM peak hour is LOS C. Analysis using 2030 traffic volume forecasts predicts operations in this section to decrease to LOS D.

The forecasted LOS warrants consideration of improvements within this section. The following improvements are proposed:

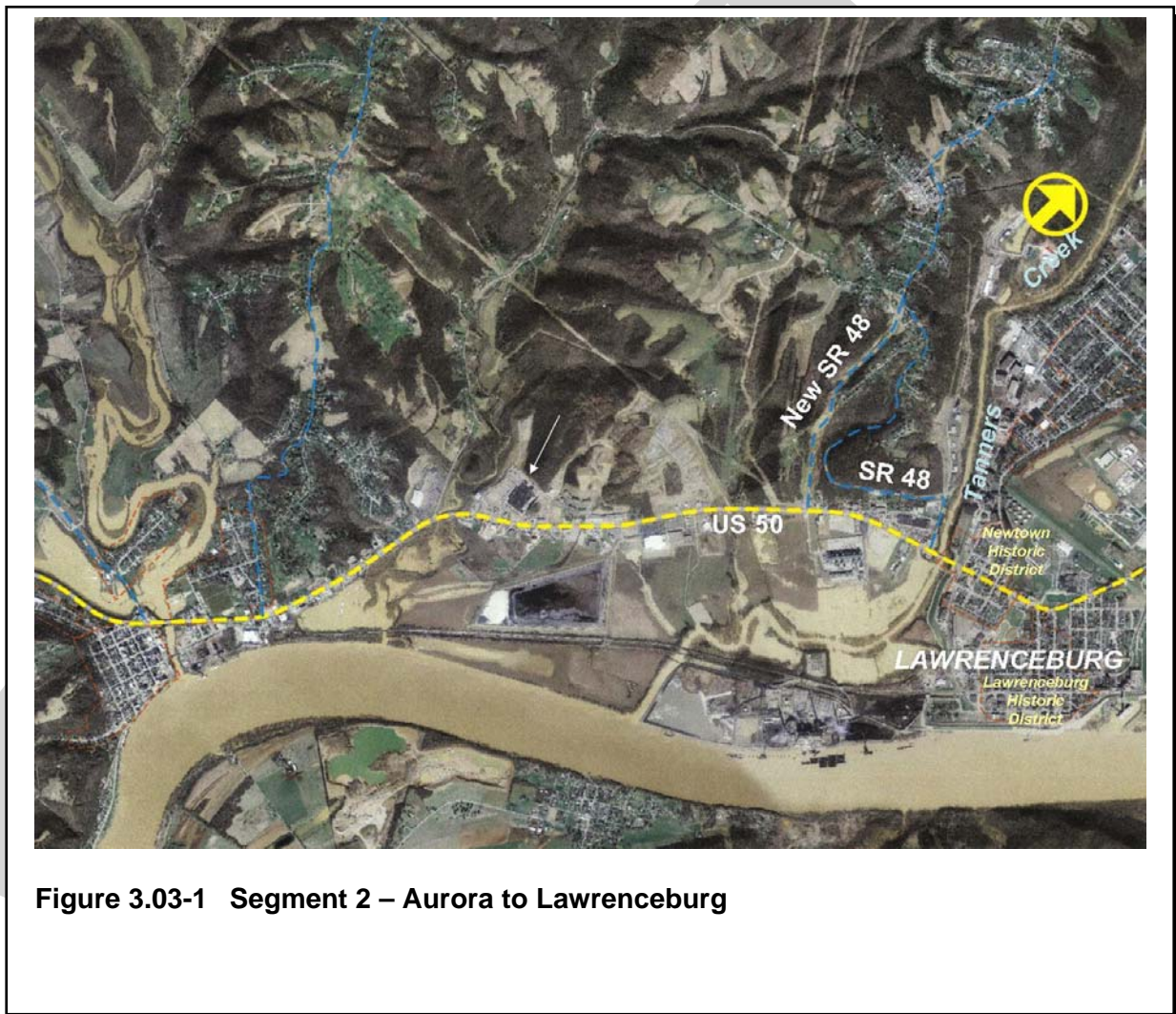


Figure 3.03-1 Segment 2 – Aurora to Lawrenceburg

“No-Build” Alternative

As shown in Tables 3.01-3 and 3.01-4, the 2030 projected LOS for the section of US 50 from SR 148 to Wilson Creek Road diminishes to LOS D, presuming no improvements are completed. Additionally, the US 50 and Wilson Creek Road, US 50 and Wal-Mart Entrance, and US 50 and SR 48 intersections all experience movements with LOS F, while overall intersection operations will experience a LOS of F. Since these levels of service are not acceptable and purpose and need are not met, the “No-Build” alternative for this Segment is not considered an option.

Short-term Improvement

Transportation System Management (TSM) Concept 11 – Eliminate Left Turn Lanes Except at Major Intersections and Replace TWLTL with Barrier Median

This management solution covers a length of 2.5 miles from SR 350 to SR 48. The proposed improvement would eliminate left turn lanes except at major intersections. Also suggested is a replacement of two-way left turn lanes with a barrier median. This solution provides encouragement of future access management solutions, such as combining existing access points wherever possible, encouraging new developments to access existing intersecting roads, and connecting existing frontage roads. The total cost of this project is \$5.0 million (2017). No additional R/W would be required and no environmental impacts are anticipated as a result of this alternate.

Since this eliminates non-signalized left turns in the corridor, engineering judgment suggests this will provide an acceptable level of service and will improve safety within this section. This serves to enhance the Statewide Mobility Corridor and thus, satisfies purpose and need. TSM Concept 11 is recommended for further evaluation.

Long-Term Improvements

Intersection Improvement – US 50 at Wilson Creek Road

This alternative was proposed at an early Community Advisory Committee (CAC) meeting. This project will provide additional capacity and will improve the Level of Service at the intersection to an acceptable level as indicated in Table 3.03-1.

The proposed improvement includes dual left turn lanes from Wilson Creek Road and US 50. The length of the project is 1500 feet on US 50 and 700 feet on Wilson Creek Road. Impacts for the project include the need for an additional 2.5 acres of R/W, including disturbance of 0.3 acres of wetland, and elimination of approximately 30 parking spaces. The total cost of this project is \$8.4 million (2017).

As indicated in Table 3.01-4, barring improvement, this intersection is projected to experience overall failure by 2030. Since the PM Peak LOS of the intersection will be improved by this project from LOS F to LOS D (Table 3.03-1), this project is recommended for further evaluation.

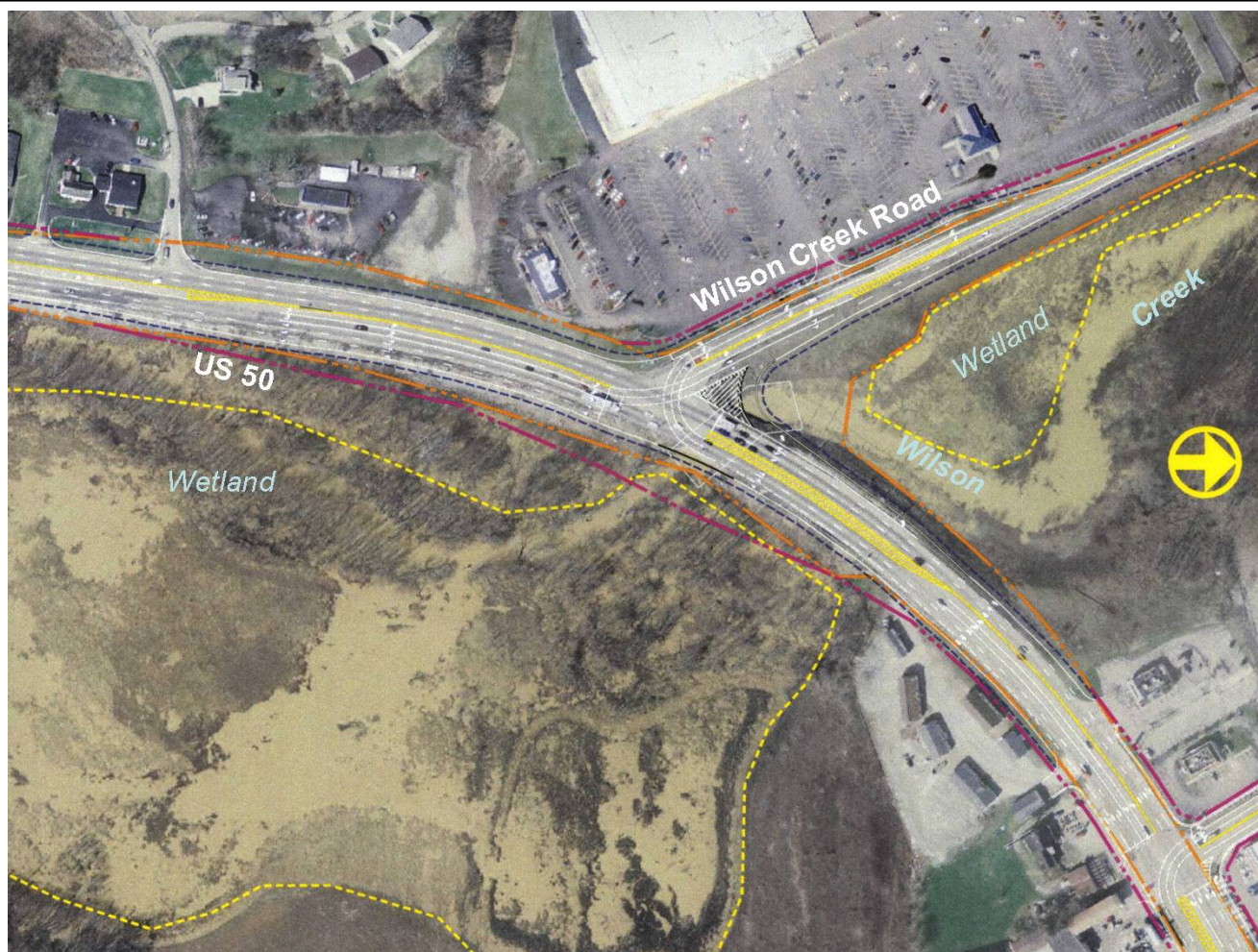


Figure 3.03-2 Intersection Improvement at US 50 and Wilson Creek Road

Location	Intersection Operations			
	AM Peak Hour		PM Peak Hour	
	Overall Intersection Ops	LOS D Movement(s)	Overall Intersection Ops	LOS D Movement(s)
US 50 and Wilson Creek Road	LOS B		LOS D	NBL SBT EBL, EBR

Note: NBL = Northbound Left SBT = Southbound Through
EBL = Eastbound Left EBR = Eastbound Right

Table 3.03-1 2030 Wilson Creek Road Improved Intersection Operations from Synchro

Intersection Improvement – US 50 at Wal-Mart Entrance

This intersection improvement was also proposed at an early CAC meeting. This project will provide additional capacity at the intersection and will improve the 2030 PM Peak Level of Service at the intersection from LOS F to LOS C, as shown in Tables 3.01-4 and 3.03-2.

The proposed improvement includes dual left turn lanes from Wal-Mart and US 50 east bound and exclusive right turns from US 50 west bound. North and south bound turning movements will also be eliminated, which will simplify signal phasing. This project will have significant business impacts to one or both sides of US 50 and will require approximately 2.0 acres of new R/W. No wetland impacts are expected for this proposed project. The construction cost of this project is \$6.7 million (2017 dollars).

Due to failure in level of service by 2030, the need for improvement of this intersection is demonstrated. As the proposed improvements will provide acceptable level of service, this project is recommended for further evaluation.

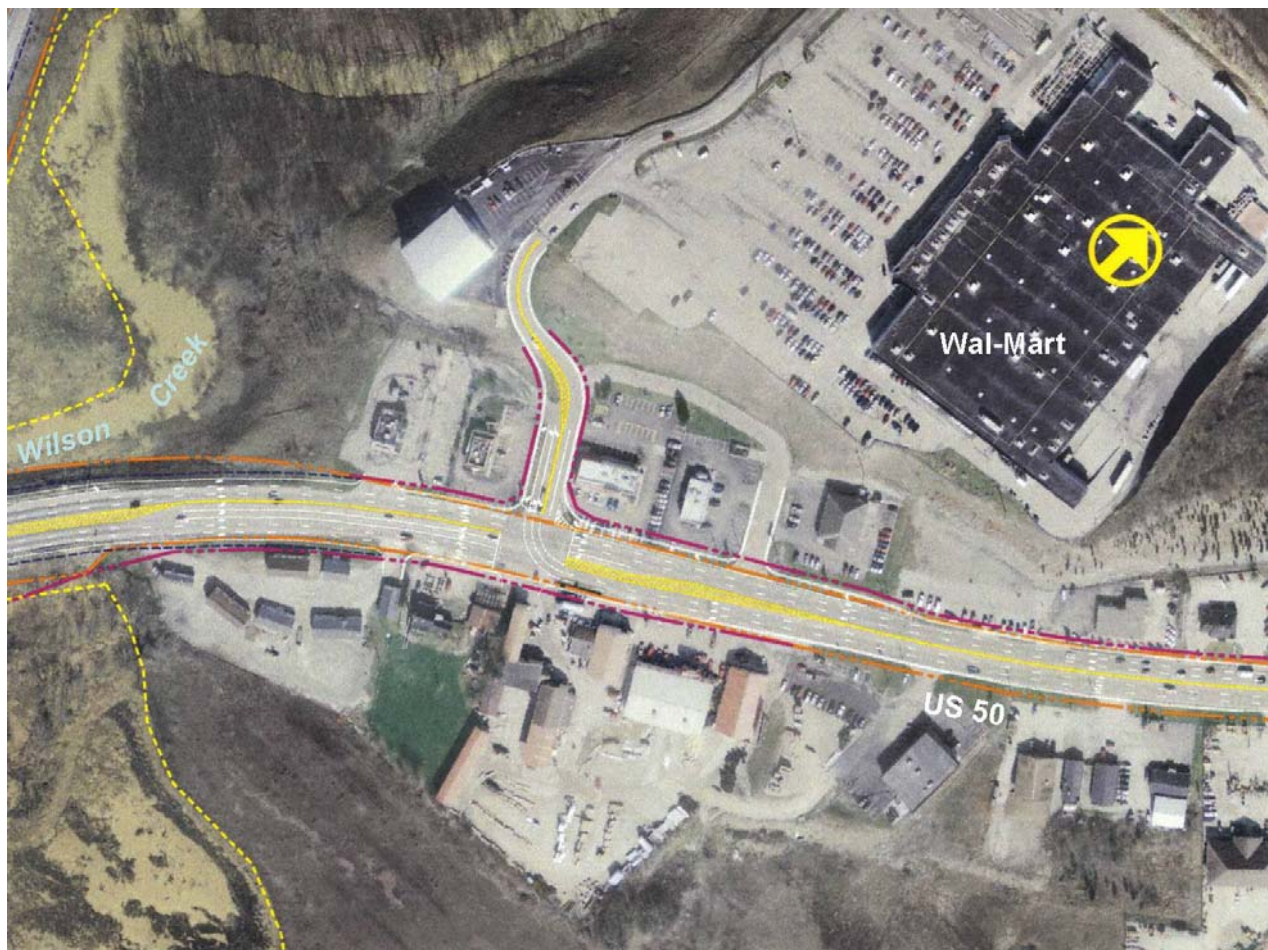


Figure 3.03-3 Intersection Improvement at US 50 and Wal-Mart Entrance

Location	Intersection Operations			
	AM Peak Hour		PM Peak Hour	
	Overall Intersection Ops	LOS D Movement(s)	Overall Intersection Ops	LOS D Movement(s)
US 50 and Wal-Mart Entrance	LOS A		LOS C	NBL SBL, SBR EBL WBL, WBT

Note: NBL = Northbound Left SBL = Southbound Left SBR = Southbound Right
EBL = Eastbound Left WBL = Westbound Left WBT = Westbound Through

Table 3.03-2 2030 Wal-Mart Entrance Improved Intersection Operations from Synchro

3.04 SEGMENT 3 – LAWRENCEBURG (SR 48 to Arch Street)

This Segment, which passes through downtown Lawrenceburg, covers a length of 1.0 mile from SR 48 on the west to Arch Street on the east.

Segment 3 experiences significant congestion at the US 50 and SR 48 intersection during the existing AM peak hour, while other locations function adequately. The existing PM peak hour sees more congestion at all locations and significant friction for turning movements across the highway. The US 50/SR 48 intersection currently operates at LOS E overall. Forecasted traffic volumes will create overall failure of the SR 48 and Main Street intersections during the PM peak hour in 2030, while the Front Street intersection will operate at LOS E. Queuing will also become a serious concern causing intersection blockage and impairing corridor safety. The SR 48 intersection is currently being relocated and constructed west of the existing intersection. This project will be completed by June 2007.

As this Segment poses the most significant current and future concern for LOS and safety, numerous alternatives were investigated during this study.

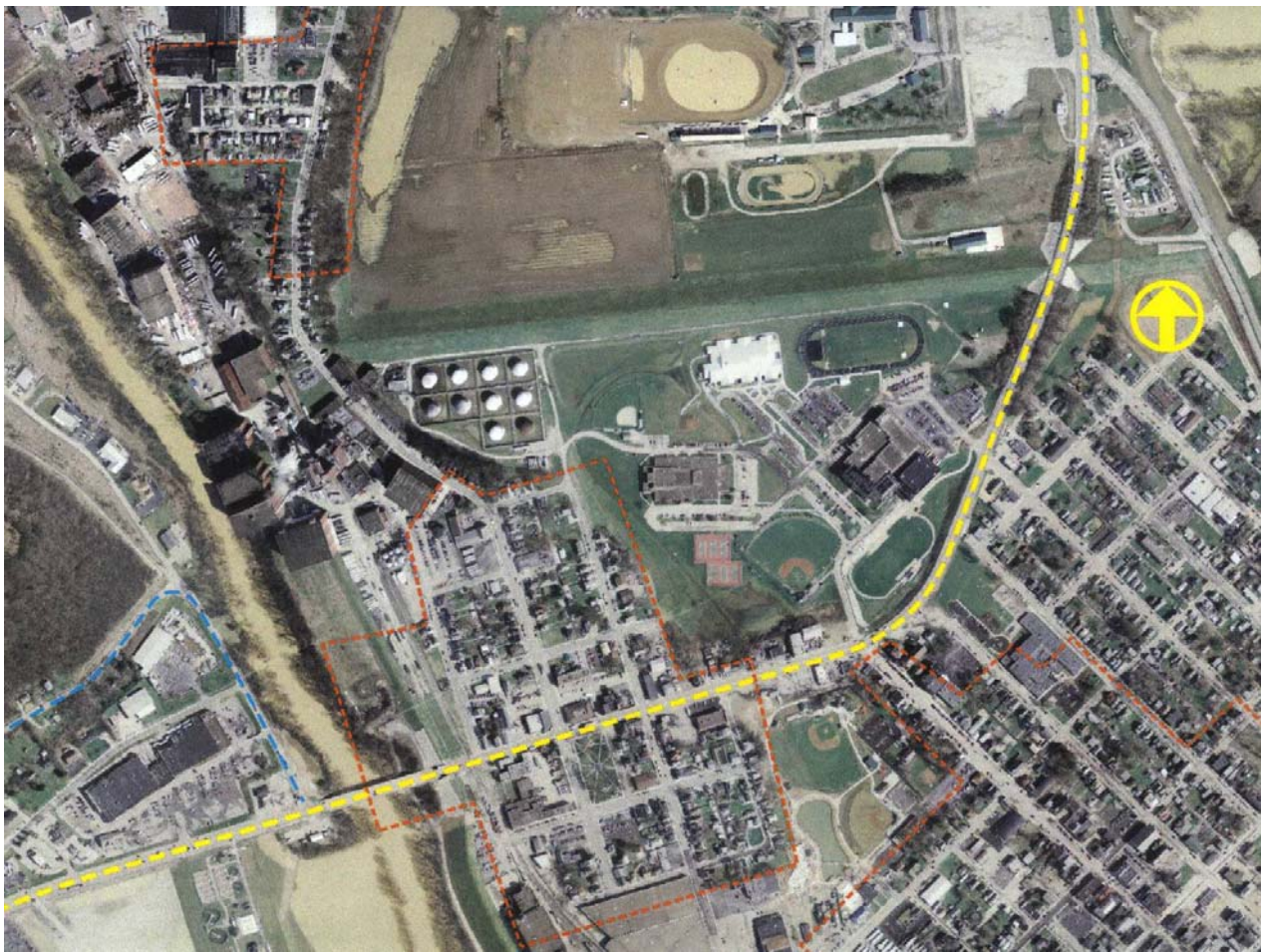


Figure 3.04-1 Segment 3 – Lawrenceburg

Short-Term Improvements

TSM Concept 2 – No Left Turns Allowed in Downtown Lawrenceburg

This Transportation System Management concept creates two-phase signals and increases capacity through Lawrenceburg. Since left turns will be prohibited, vehicles would be required to turn right and circle the block to reach an intended destination.

This solution, although providing short-term improvement, is not expected to be sufficient to improve operations to LOS D or better. Minimal impacts on US 50 are expected, but secondary impacts to other local streets and local businesses may be significant. The total cost of this project is estimated at \$400,000 (2008 dollars)

This project is recommended for further evaluation as a short-term solution to congestion for downtown Lawrenceburg, due to the ability to complete the project in a short timeframe and the low cost and minimal impacts of the alternative. Ultimately, however, long-term solutions must also be considered.

TSM Concept 3 – Reversible Lanes in Downtown Lawrenceburg

This Transportation System Management concept provides for three lanes in the peak direction and two lanes in the opposite direction, with left turns prohibited during peak hours. During off-peak hours, a two-way left turn lane will be utilized, with two lanes operating in each direction.

Minimal impacts are expected through this solution; approximately 1.2 acres of new R/W will be required and 5-10 relocations may be necessary. The total construction cost is estimated at \$2.4 million (2017 dollars).

Although this alternative would provide acceptable 2030 operations, this alternative is not being carried forward due to agency concerns. The expected public acceptance level of this alternative is extremely low due to a lack of driver familiarity with this type of management concept. Driver unfamiliarity may also result in decreased safety in this segment.

Long-Term Improvements

Alternate 1 – On-Alignment Capacity Expansion (from 4 to 6 lanes) in Downtown Lawrenceburg

This solution requires three through lanes plus dual left turn lanes and exclusive right turn lanes at major intersections in the City of Lawrenceburg. The proposal addresses congestion through Lawrenceburg and improves the LOS to an acceptable level. Projected 2030 Alternate 1 LOS for intersections in this portion of US 50 are provided in Table 3.04-1.

Alternate 1 will have major business impacts on the north side of US 50 and will require approximately 4.0 acres of new R/W. This alternative is expected to require 10 to 15 relocations and impact a minimum of 10 historic structures in two historic districts. The total construction cost of this alternative is estimated at \$20 million (2017 dollars).



Figure 3.04-2 Alternate 1

Location	Intersection Operations			
	AM Peak Hour		PM Peak Hour	
	Overall Intersection Ops	LOS D Movement(s)	Overall Intersection Ops	LOS D Movement(s)
US 50 and Main Street	LOS B		LOS A	
US 50 and Front Street	LOS B	NBL SBL	LOS D	NBL, NBT SBL EBT
US 50 and Walnut Street	LOS A	NBL SBL	LOS A	NBL SBL
US 50 and Arch Street	LOS A	WBL	LOS A	SBL EBL WBL
US 50 and Argosy Parkway	LOS B	NBL SBL EBL WBL	LOS B	NBL SBL EBL WBL

Note: NBL = Northbound Left NBT = Northbound Through NBR = Northbound Right
 SBL = Southbound Left SBT = Southbound Through SBR = Southbound Right
 EBL = Eastbound Left EBT = Eastbound Through EBR = Eastbound Right
 WBL = Westbound Left WBT = Westbound Through WBR = Westbound Right

Table 3.04-1 2030 Alternative 1 Intersection Operations from Synchro

The safety need for this project is satisfied by improvements to the Arch Street Intersection. Congestion and corridor improvements also satisfy need. Although historical site impacts are expected along with other building relocations, this project satisfies purpose and need for improvement of the corridor, and proposed improvements along the existing alignment make this a viable alternative for improvement of US 50. Alternative 1 is recommended for further evaluation.

Alternate 4 – One-Way Pair (South)

This Alternative proposes a one-way pair to the south of US 50 through Lawrenceburg that provides three-lane, one-way streets with short turn lanes at intersections. The alternative improves the Level of Service to an acceptable level.

Significant impacts will be experienced with this option, due to significant new roadway and local street reconfigurations. Historic district impacts are also significant. This solution will require approximately 20 acres of new R/W, including 3.0 acres of wetlands, and 30-40 relocations.

The total construction cost is estimated at \$45 million (2017 dollars).



Figure 3.04-3 Alternate 4

This project improves LOS in the corridor and satisfies project needs. However, due to significant impacts, including R/W requirements, historic site impacts, and excessive cost, this Alternate is not recommended for further evaluation.

Alternate 5 – One-Way Pair (Near North)

This Alternate proposes a one-way pair to the near north of US 50 through Lawrenceburg that provides three-lane, one-way streets with short turn lanes at intersections. The alternative improves the Level of Service to an acceptable level.

This option covers a total length of 1.1 miles and requires new roadway construction and local street reconfiguration. It is expected to require 1.5 acres of new R/W, including 0.3 acres of wetlands. Alternate 5 will also require 4 to 5 relocations and, if constructed today, would impact a minimum of twenty structures listed as notable, outstanding or contributing in the Dearborn County Interim Report. Impacts to historic structures should be considerably less for this project, presuming the proposed additional bridge over Tanner's Creek is constructed prior to this project. The total construction cost is estimated at \$24 million (2017 dollars).

A summary of overall intersection operations and specific movements of LOS F from Synchro modeling for this alternative follows in Table 3.04-2. As shown, overall intersection operations for major intersections in this Segment are at a sufficient level to demonstrate this project satisfies purpose and need.



Figure 3.04-4 Alternate 5

Location	Intersection Operations			
	AM Peak Hour		PM Peak Hour	
	Overall Intersection Ops	LOS F Movement(s)	Overall Intersection Ops	LOS F Movement(s)
US 50 and Main Street	LOS B		LOS C	
Main Street and Fourth Street	LOS A		LOS B	
US 50 and Front Street	LOS A		LOS B	
Front Street and Fourth Street	LOS B		LOS B	
US 50 and Walnut Street	LOS A		LOS A	
US 50 and Arch Street	LOS A		LOS A	
US 50 and Argosy Parkway	LOS B	NBL SBL EBL WBL	LOS B	NBL SBL EBL WBL

Note: NBL = Northbound Left NBT = Northbound Through NBR = Northbound Right
SBL = Southbound Left SBT = Southbound Through SBR = Southbound Right
EBL = Eastbound Left EBT = Eastbound Through EBR = Eastbound Right
WBL = Westbound Left WBT = Westbound Through WBR = Westbound Right

Table 3.04-2 2030 Alternative 5 Intersection Operations from Synchro

Travel Demand Modeling, performed by Wilbur Smith Associates was also used to evaluate this alternative. The purpose of the modeling was to forecast future US 50 travel, estimate the effects of future development impacts on Dearborn County's arterial/major collector roadway network, and evaluate select alternatives developed to address congestion with the corridor. The full report from Wilbur Smith is included in this report as Appendix A. A summary of their results is provided in this section.

To evaluate Alternative 5, a number of capacity assumptions were made for the alignment, and these are analyzed using scenarios 5a, 5b, and 5c:

Scenario 5a is a conservative analysis, which assumes that despite the addition of a lane in each direction, operational considerations allow only a modest improvement in capacity, from 2320 to 2700 vph per direction, only on the one-way links.

Scenario 5b assumes a design more successful in improving capacity, with final capacities of 3500 vph per direction. As with Scenario 5a, only the newly-coded one-way links are affected.

Scenario 5c represents a very aggressive campaign to improve capacity through downtown Lawrenceburg, as well as Greendale. Capacities on the one-way couplet links are improved to 5000 vph per direction. In addition, the segments of US 50 between the one-way couplet and the I-275 ramps (e.g. the sections through Greendale) are improved from a capacity of 2320 to 3500 vph per direction. Finally, capacity on the easternmost segment of SR 1, between Ridge Avenue and US 50 – a consistent bottleneck in scenarios where it is unaltered – is improved from 1350 to 2700 vph/dir.

It should be stressed that, in the basic sub-network used for this project, the Tanners Creek Bridge is a singular connection between two sets of the sub-model's TAZs. All trips wishing to pass from one side of the sub-area to the other must use this link; there is no alternate route. Additionally, the analysis methodology involves assigning pre-determined trip tables to alternate networks, and excludes trip generation and distribution. As a result, any scenario which adds capacity but no new alignment, such as Alternative 5, will not show any changes in volume on the Tanners Creek Bridge, and volume changes on other parts of the US 50 corridor represent a shift to or from other routes. The Tanners Creek Bridge link volumes will be the same in the scenario output as in the base, and the sum of cordon volumes on US 50 and parallel links will also remain constant.

The alternative 5 scenarios are nonetheless useful to show the effect that improvements in capacity have on travel time and congested speeds. Table 3.04-3 shows improvements in travel time and speed on US 50 between the intersection with Old US 50 to the west and the SR-1/I-275 interchange to the northeast.

Scenario 5a, Modest Capacity Increase: If the Scenario 5a improvements had been in place in the year 2000, they would have had only a minor impact, improving travel time and speed by only 5% westbound (WB) and 1% eastbound (EB). However, by the year 2030, the model predicts that without any improvements, average congested speeds will fall by more than half, and travel times more than double. With the Scenario 5a improvements in place in 2030, travel times are 24% lower and average speed 33% higher than without them, though congestion is still markedly higher than in the 2000 scenario.

During the AM and PM peak periods, the benefits of the Scenario 5a improvements are more pronounced in the peak directions. During the AM peak, the improvements deliver a 38% improvement in travel time and 62% improvement in average speed in the eastbound lanes of the Lawrenceburg / Greendale segment of US 50. During the PM peak, the travel time and speed improvements in the westbound direction are 29% and 43%, respectively.

Scenario 5b, Intermediate Capacity Increase: With the Scenario 5b improvements in place, travel time and speed in the year 2000 would have been about 6% better westbound and 4% better eastbound. With the Scenario 5b improvements in place in 2030, travel times are 35% lower and average speed 53% higher than without them. Congestion is considerably higher than in the 2000 scenario. During

the peak periods, the benefits are again more pronounced in the peak directions, with 47% and 89% improvements in travel time and average speed, respectively, in the eastbound direction in the morning, and 41% and 72% improvements westbound in the afternoon.

Scenario 5c, Aggressive Capacity Increases: The Scenario 5c improvements lead to improvements in travel time and speed that are significantly higher than the other scenarios. Even in the year 2000, time and speed would have been improved by about 10% in both directions. In 2030, travel times in Scenario 5c are 55 to 60% lower and average speeds 120 to 155% higher than in the corresponding Do-Nothing scenario. Congestion in 2030 is only slightly worse than in the 2000 scenario, and is in fact better than current conditions. During the peak periods, capacity is high enough to accommodate the peak direction traffic without significant impact on highway performance.

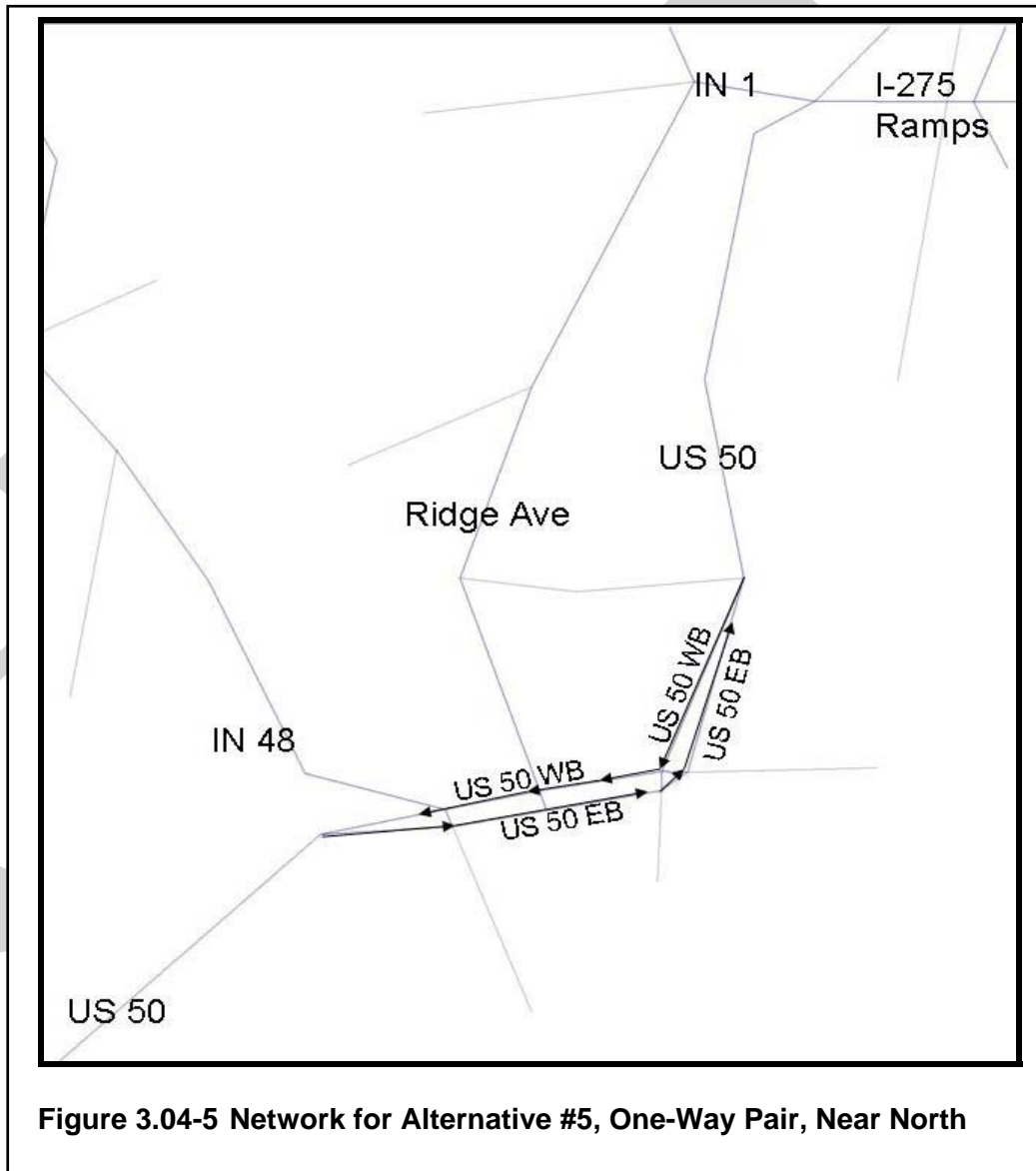


Figure 3.04-5 Network for Alternative #5, One-Way Pair, Near North

Eastbound / Northbound					Westbound / Southbound				
Year 2000					Year 2000, Daily				
	Do-Nothing	5a	5b	5c		Do-Nothing	5a	5b	5c
Travel Time-min	4.71	4.65	4.52	4.3		4.7	4.53	4.45	4.25
Impr over DN	n/a	-0.06	-0.2	-0.41		n/a	-0.17	-0.3	-0.45
Pct Impr	n/a	-1%	-4%	-9%		n/a	-4%	-5%	-10%
Avg. Speed-mph	36.82	37.29	38.36	40.33		36.89	38.81	39.51	41.36
Impr over DN	n/a	0.48	1.5	3.51		n/a	1.91	2.6	4.47
Pct Impr	n/a	1%	4%	10%		n/a	5%	7%	12%
Year 2030					Year 2030, Daily				
	Do-Nothing	5a	5b	5c		Do-Nothing	5a	5b	5c
Travel Time-min	11.54	8.74	7.52	4.5		9.87	7.48	7.05	4.57
Impr over DN	n/a	-2.80	-4.0	-7.04		n/a	-2.39	-2.8	-5.30
Pct Impr	n/a	-24%	-35%	-61%		n/a	-24%	-29%	-54%
Avg. Speed-mph	15.03	19.84	23.06	38.53		17.57	23.50	24.94	38.47
Impr over DN	n/a	4.81	8.0	23.51		n/a	5.93	7.4	20.90
Pct Impr	n/a	32%	53%	156%		n/a	34%	42%	119%
Year 2030					Year 2030, AM Peak Pd				
	Do-Nothing	5a	5b	5c		Do-Nothing	5a	5b	5c
Travel Time-min	15.61	9.66	8.28	4.54		10.42	8.85	7.33	4.58
Impr over DN	n/a	-5.95	-7.3	-11.07		n/a	-1.57	-3.1	-5.84
Pct Impr	n/a	-38%	-47%	-71%		n/a	-15%	-30%	-56%
Avg. Speed-mph	11.11	17.95	20.94	38.19		16.64	19.86	23.98	38.38
Impr over DN	n/a	6.84	9.8	27.09		n/a	3.22	7.3	21.74
Pct Impr	n/a	62%	89%	244%		n/a	19%	44%	131%
Year 2030					Year 2030, PM Peak Pd				
	Do-Nothing	5a	5b	5c		Do-Nothing	5a	5b	5c
Travel Time-min	9.31	7.66	7.04	4.46		9.74	6.89	5.74	4.46
Impr over DN	n/a	-1.65	-2.3	-4.85		n/a	-2.85	-4.0	-5.28
Pct Impr	n/a	-18%	-24%	-52%		n/a	-29%	-41%	-54%
Avg. Speed-mph	18.63	22.64	24.63	38.88		17.80	25.52	30.63	39.42
Impr over DN	n/a	4.01	6.0	20.25		n/a	7.71	12.8	21.61
Pct Impr	n/a	22%	32%	109%		n/a	43%	72%	121%

**Table 3.04-3 Travel Time Savings Resulting from Alternative 5 Improvements
(Scenarios a, b, and c Along US 50 Between the Intersections with Old
US 50 and I-275)**

Ridge Avenue: Travelers seeking an alternate route to US 50 through Greendale and/or Lawrenceburg may use Ridge Avenue, which intersects US 50 just to the east of the Tanners Creek Bridge, and joins State Road 1 about a third of a mile west of US 50 and the I-275 entrance ramps. Those bound to or from I-275 would use the one-third mile segment of SR 1 as part of the bypass as well; those bound westward on SR 1 would relieve traffic from the easternmost segment of SR 1 by using this alternate route. Depending on the policy goals for Ridge Ave, it may be worthwhile to consider the effects of the scenarios on volume carried by Ridge Avenue.

Improving capacity on US 50 through Lawrenceburg has the effect of reducing traffic on Ridge Avenue, and diverting it back to US 50. In scenario 5a, the effect is negligible, with less than a percent of traffic removed from Ridge Ave. in some time periods. In Scenario 5b, year 2030 traffic on Ridge Ave falls between 3 and 5% from the do-nothing levels, while in Scenario 5c, about 20% of do-nothing traffic is diverted back to US 50.

These findings should be kept in mind when reviewing Table 3.04-3 (above). The travel times and speeds reflect not just an increase in capacity, but also a countervailing increase in volume due to diversion of Ridge Avenue traffic.

The travel demand modeling and operations modeling both prove a strong need for improvements in this Segment and both show improved operations and decreases in congestion with construction of this alternative. As this alternative provides improvements at generally lower cost than other alternatives for this Segment, and expected impacts are generally lower, Alternative 5 is to move forward for additional consideration.

Alternate 6 – One-Way Pair (Mid North)

This new roadway alternative proposes a mid-north pair of three-lane, one-way streets with short turn lanes at intersections. This 1.2-mile option provides acceptable level of service along US 50 through the City of Lawrenceburg. Projected intersection operations levels of service are provided in Table 3.04-4.



Figure 3.04-6 Alternate 6

Since new roadway will be constructed for this alternative, extensive R/W (approximately 6.2 acres) will be required, along with 5 to 10 relocations. A significant number of structures listed as notable or outstanding in the Dearborn County Interim report would be impacted. The total

Location	Intersection Operations			
	AM Peak Hour		PM Peak Hour	
	Overall Intersection Ops	LOS D Movement(s)	Overall Intersection Ops	LOS D Movement(s)
US 50 and Main Street	LOS B		LOS B	
Main Street and Fourth Street	LOS B		LOS C	
Main Street and Ridge Avenue	LOS B	WBT	LOS C	
US 50 and Front Street	LOS A		LOS B	
Front Street and Fourth Street	LOS A		LOS A	
US 50 and Walnut Street	LOS A		LOS A	
US 50 and Arch Street	LOS A		LOS A	
US 50 and Argosy Parkway	LOS B	NBL SBL EBL WBL	LOS B	NBL SBL EBL WBL

Note: NBL=Northbound Left NBT = Northbound Through NBR = Northbound Right
SBL = Southbound Left SBT = Southbound Through SBR = Southbound Right
EBL = Eastbound Left EBT = Eastbound Through EBR = Eastbound Right
WBL = Westbound Left WBT = Westbound Through WBR = Westbound Right

Table 3.04-4 2030 Alternative 6 Intersection Operations from Synchro

construction cost of this alternate is estimated at \$25 million (2017 dollars).

As shown above in Table 3.04-4, operations modeling for this alternative indicates this project will result in acceptable levels of service to downtown Lawrenceburg, while improving safety at Arch Street. Additionally, Travel Demand Modeling results for Alternate 5 can be reasonably assumed to apply to Alternate 6, since these options function essentially the same. As this Alternative satisfies purpose and need and has lower cost and environmental and cultural impacts, this project is recommended for further evaluation for improvement of the corridor.

Alternate 7 – One-Way Pair (Far North)

This Alternate proposes a one-way pair to the far north of US 50 through Lawrenceburg that provides three-lane, one-way streets with short turn lanes at intersections. The alternative improves the Level of Service to an acceptable level.

This option requires new roadway construction and local street reconfiguration. The overall length and separation of the two routes also requires construction of new connector streets. This is expected to require 16.5 acres of new R/W, including 1.2 acres of wetlands. Alternate 7 will also require 35 to 40 relocations, including an estimated 30 historic structures in two districts. The total construction cost is estimated at \$47 million (2017 dollars).

Although this alternative will provide an acceptable level of service for the corridor, due to the significant environmental and cultural impacts and high construction cost, this alternative is not being advanced for further study.

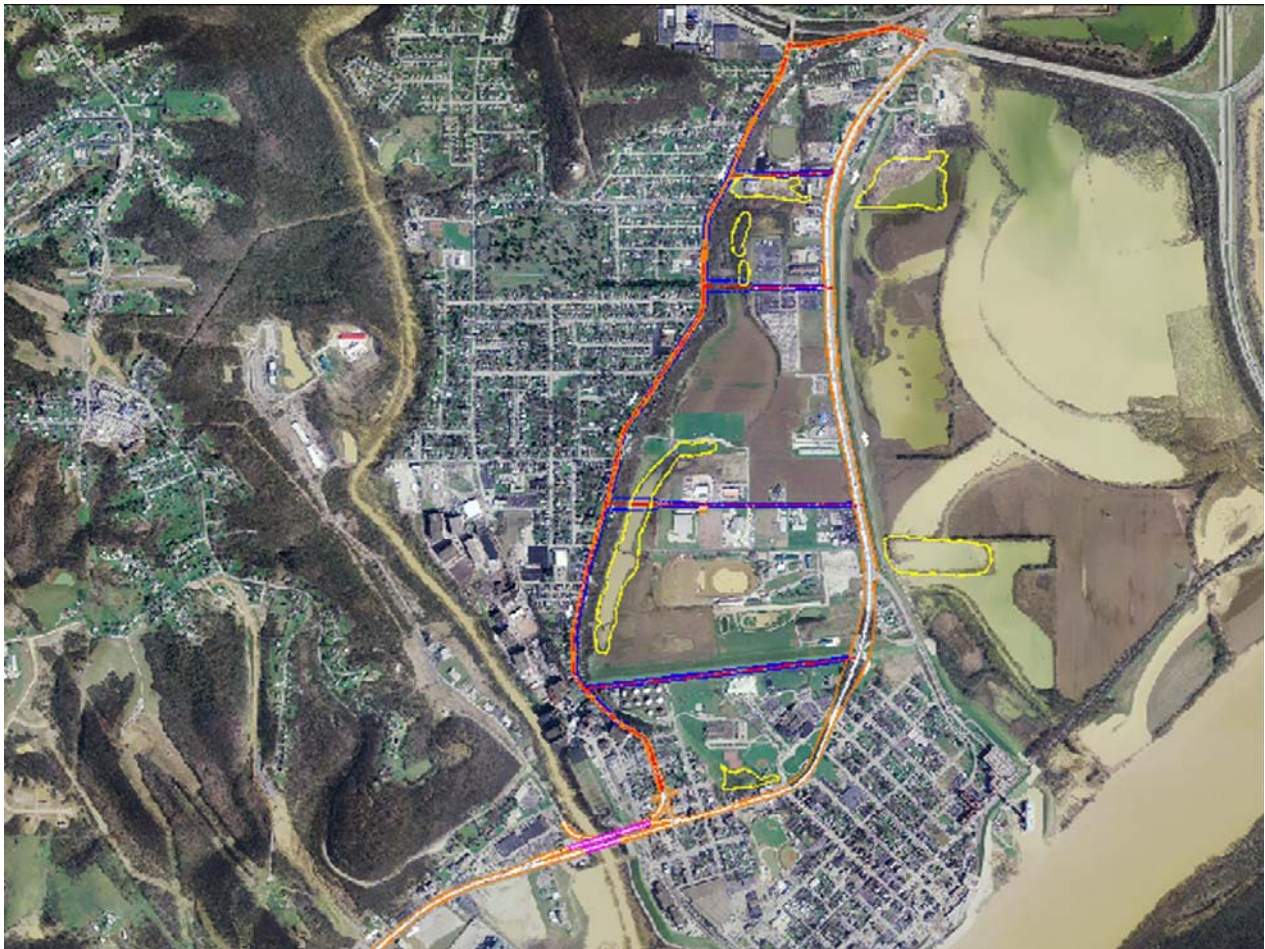


Figure 3.04-7 Alternate 7

Alternate 8 – SR 1 to SR 48 Connector (Nowlin Avenue)

Alternative 8 investigated a new roadway that connects SR 1 to SR 48, which reflects a local agency project being developed by the City of Lawrenceburg. This option was considered in this US 50 Corridor Study for the sole purpose of determining whether the local project would have a positive impact on congestion through Lawrenceburg.

For construction of this alternative, approximately 70 acres of new R/W would be required, with 5 to 10 relocations expected. Potentially significant environmental impacts could also be expected as a result of this alternative. The total construction cost is estimated at \$37 million (2010 dollars).

For Travel Demand Modeling, the Alternative 8 scenarios (slow and fast) represent a situation where the Tanner's Creek Bridge is no longer a singular connection between two areas of the sub-model. Therefore, diversion from US 50 in Lawrenceburg is possible. Nonetheless, the sum of volumes on the Tanners Creek Bridge and new Bypass links will equal the total volume on the Tanners Creek Bridge link in a corresponding 'Do-Nothing' scenario.

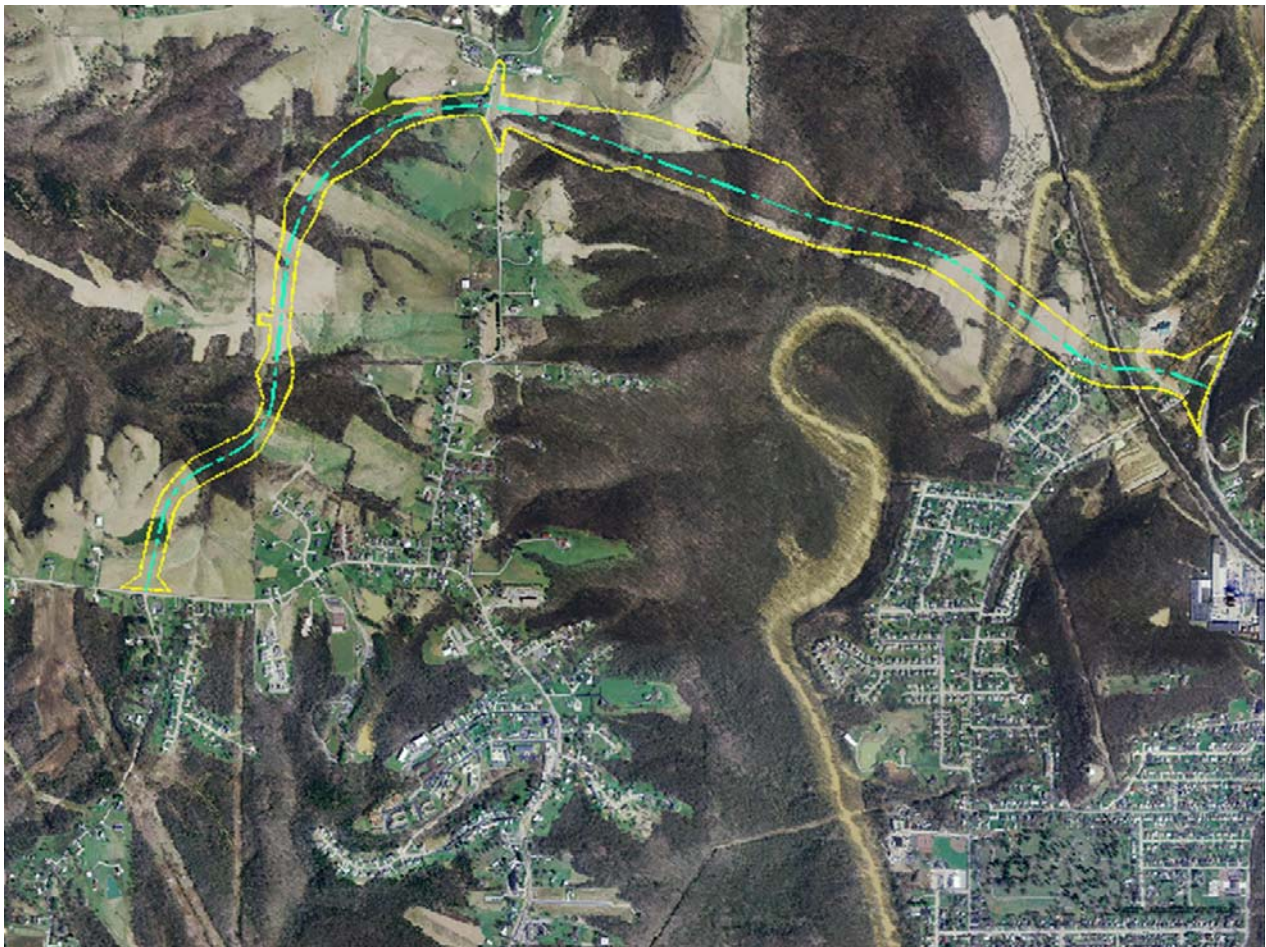


Figure 3.04-8 Alternate 8

Volumes: Both the fast and slow Bypass scenarios succeed at removing a margin of traffic from US 50 in downtown Lawrenceburg. Table 3.04-4 shows daily volumes at various key points in the study area, as predicted by do-nothing, fast bypass, and slow bypass scenarios in 2000 and 2030. The table demonstrates a number of observations:

- On the critical Tanners Creek Bridge link, the slower bypass is predicted to remove about 4,400 daily trips, or about 10.5%, from the anticipated 2030 volume. The faster bypass is predicted to remove another ~2,200 daily trips, for a reduction of 14%.
- Farther east on the opposite side of Lawrenceburg, the faster bypass removes over 15% of 'Do-nothing' traffic, while the slower alternative removes only about 3.5%. This large difference is compensated partially by higher volumes on Ridge Ave in the fast bypass scenario, which reflect differing equilibrium assignments in the two scenarios. To some extent, though, this difference indicates that the faster, higher-capacity roadway induces trips originating in Lawrenceburg to go the longer way around to reach some destinations along SR 48 and SR 148, while in the slower bypass scenario, these trips still use the Tanners Creek Bridge.
- On US 50 just west of SR 148, traffic is slightly *higher* with the bypass than without it. This is because traffic coming through Aurora and bound for locations along SR 48, which had traveled up SR 148, now takes US 50 to SR 48. This is due not to the main bypass link, but to the new, westward connection between US 50 and SR 48.
- Despite the substantial use of the bypass, traffic on SR 48 near its junction with US 50 (but before the split between old and new intersecting links) actually falls with the bypass in place. This speaks to the traffic demand pattern. The bypass link serves almost exclusively to carry traffic generated by / attracted to areas north of US 50, along SRs 48 and 148 (TAZs 4-7, and 26), and points outside the study area to the northwest on SR 48. The total traffic exchanged between these locations and the vicinity of the I-275 ramps now uses the bypass, and no longer has to endure the congestion on US 50 through Lawrenceburg.
- These results are also observed when the AM and PM peak periods are analyzed, and as one would expect, they tend to be more pronounced in the peak directions. For detail on the peak period volumes, see Appendix VII of the Wilbur Smith report in Appendix A of this document.

Through Trips: As mentioned in the last point above, the new bypass alignment serves mostly local traffic originating in areas north of US 50, along SRs 48 and 148. In fact, a select link analysis indicates that the slower bypass link carries no through traffic at all. The faster alignment is projected to carry some through trips, particularly during peak periods. In the AM peak, about 230 of the projected 1,175 trips eastbound on the fast bypass are through trips. This is almost 20%. In the non-peak direction the percentage of through trips is about 50 trips, for 5% of bypass use in that direction. In the PM period, the projected through trip percentages are only 6.5% in the peak direction and under 5% in the off-peak.

		Traffic Count (2001)	Do Nothing 2000	Do Nothing 2030	60 mph Bypass (8b) 2000	60 mph Bypass (8b) 2030	42 mph Bypass (8a) 2030
	Location						
US 50	West of SR 48	35,550	33,891	49,973	34,569	50,575	50,040
US 50	Tanners Creek Bridge	41,930	41,916	60,856	36,595	52,182	54,414
US 50	Bet. Argosy Pkwy & I-275 Ramps	34,950	34,373	47,806	30,733	40,509	46,180
US 50	East of SR 1	13,600	14,848	25,778	14,848	25,778	25,778
I-275	Entrance/Exit Ramps	Unknown	47,450	76,869	47,450	76,869	76,869
By-pass	N of US 50 @ SR 1	13,970	20,121	32,427	24,273	39,662	34,112
By-pass	New Segment	N/A	-	-	5,321	8,674	6,442
By-pass	N of US 50 @ SR 48	12,640	12,203	15,913	7,560	8,547	9,538
Ridge Ave	S of SR 1 (N end)	Unknown	12,255	22,137	10,714	21,006	17,451
Ridge Ave	N of US 50 (S. end)	Unknown	11,877	20,057	10,213	18,511	15,552

**Table 3.04-5 Traffic Volumes at Key Locations for Alternative 8
(Scenarios a and b, as Compared to Traffic Counts and Corresponding Do-Nothing Volumes)**

Travel Times: Table 3.04-4 shows the congested travel times and speeds for the Daily, AM Peak, and PM Peak scenarios for Alternative 8, in both the base and future years, compared to corresponding “do-nothing” scenarios. The table shows that if Scenario 8b (the faster bypass) had been in place in the year 2000, it would have had a moderate impact, improving travel time and speed by 6 and 8% in each direction. By the year 2030, the model predicts that without any improvements, average congested speeds will fall by more than half, and travel times more than double. With the Scenario 8b bypass in place in 2030, travel times are about 40% lower and average speed is higher by 70%, westbound, and 80%, eastbound, than without them. Congestion is somewhat higher in Scenario 8b than in the base (2000 Do-Nothing) scenario, but is much closer to the base values than the 2030 do-nothing values.

During the AM and PM peak periods, the congestion benefits of the Fast Bypass (8b) are more pronounced in the peak directions, and are greater than the percentage improvements in the daily scenario. During the AM peak, the Scenario 8b improvements deliver a 46% improvement in travel time and 85% improvement in average speed in the eastbound lanes of the Lawrenceburg / Greendale segment of US 50. During the PM peak, the travel time and speed improvements in the westbound direction are 26% and 36%, respectively.

US 50	Eastbound / Northbound				Westbound / Southbound		
Year 2000		Year 2000, Daily					
	Do-Nothing	8a	8b		Do-Nothing	8a	8b
Travel Time (min)	4.71	4.67	4.41		4.70	4.62	4.4
Impr over DN	n/a	-0.04	-0.30		n/a	-0.08	-0.30
Pct Impr over DN	n/a	-1%	-6%		n/a	-2%	-6%
Avg Speed (mph)	36.82	37.13	39.32		36.89	38.05	39.95
Impr over DN	n/a	0.32	2.50		n/a	1.16	3.06
Pct Impr over DN	n/a	1%	7%		n/a	3%	8%
Year 2030		Year 2030, Daily					
	Do-Nothing	8a	8b		Do-Nothing	8a	8b
Travel Time (min)	11.54	8.89	6.42		9.87	7.54	5.9
Impr over DN	n/a	-2.65	-5.12		n/a	-2.33	-3.97
Pct Impr over DN	n/a	-23%	-44%		n/a	-24%	-40%
Avg Speed (mph)	15.03	19.51	27.01		17.57	23.32	29.80
Impr over DN	n/a	4.48	11.98		n/a	5.75	12.23
Pct Impr over DN	n/a	30%	80%		n/a	33%	70%
Year 2030		Year 2030, AM Peak Pd					
	Do-Nothing	8a	8b		Do-Nothing	8a	8b
Travel Time (min)	16.39	11.58	8.88		7.90	6.69	6.25
Impr over DN	n/a	-4.81	-7.51		n/a	-1.21	-1.65
Pct Impr over DN	n/a	-29%	-46%		n/a	-15%	-21%
Avg Speed (mph)	11.90	16.84	21.96		24.68	29.15	31.20
Impr over DN		4.94	10.06		n/a	4.46	6.52
Pct Impr over DN		42%	85%		n/a	18%	26%
Year 2030		Year 2030, PM Peak Pd					
	Do-Nothing	8a	8b		Do-Nothing	8a	8b
Travel Time (min)	8.33	6.86	6.52		10.53	8.57	7.84
Impr over DN	n/a	-1.47	-1.81		n/a	-1.96	-2.69
Pct Impr over DN	n/a	-18%	-22%		n/a	-19%	-26%
Avg Speed (mph)	23.41	28.43	29.91		18.52	23.03	25.18
Impr over DN	n/a	5.02	6.50		n/a	4.52	6.66
Pct Impr over DN	n/a	21%	28%		n/a	24%	36%

**Table 3.04-6 Travel Time Savings Resulting from Alternative 8
(Improvements for Scenarios a and b Along US 50 Between
the Intersections with Old US 50 and I-275)**

The Fast Bypass scenario delivers better travel time savings in downtown Lawrenceburg than Scenario 5, which directly improves capacity on US 50. This may or may not reflect reality since, as noted,

Scenario 5 assumes only a moderate increase in traffic capacity, from 2320 to 2700 vph in each direction.

Ridge Ave: As discussed earlier, Ridge Avenue serves as an alternate route to US 50 through Greendale and/or Lawrenceburg, from the east side of the Tanners Creek Bridge to the I-275 entrance ramps. Scenario 8a has the impact one would anticipate on Ridge Ave; volumes drop as trips are displaced to the Bypass link or to US 50. In the 2030 scenario, daily traffic on Ridge Ave. is about 20% lower than in the corresponding Do-Nothing scenario.

The faster bypass scenario (8b) shows a surprising result. Although the faster bypass carries more volume than the slower bypass, Ridge Avenue also carries more volume in the faster bypass scenario than in the slower. This indicates that the fast bypass is attractive enough to divert trips from generators at or near the southern end of Ridge Avenue which would otherwise use the US 50 bridge across Tanners Creek. These trips instead find it more expedient to follow Ridge Avenue to State Route 1 to the new Bypass link, to reach their destinations.

Operations modeling of this alternative does not support the conclusion that this alternative will relieve sufficient volume of traffic for the corridor to perform at acceptable levels of service, which does not support the purpose and need. Other proposed alternatives provide higher levels of service and at lower cost.

Additionally, the operations of SR 1 were not investigated for the increased traffic expected on this route if a connector is constructed. It is anticipated that the increase of traffic on SR 1 will cause additional safety and congestion concerns on this roadway, possibly warranting improvements to SR 1, that are not included in the cost estimate of this alternate.

Due to these conclusions, significant R/W requirements, wetland impacts, and high construction costs, Alternative 8 is not being advanced for further evaluation.

Alternate 9 - SR 1 to SR 48 Connector (Indiana Glass)

Alternative 9 investigated a new roadway that connects SR 1 to SR 48, which, like Alternate 8, reflects a local agency project being developed by the City of Lawrenceburg. This option was considered in this US 50 Corridor Study for the sole purpose of determining whether the local project would have a positive impact on congestion through Lawrenceburg.

This alternative, although providing an alternate route, will not improve the Level of Service through Lawrenceburg, according to operations modeling performed. Similar Travel Demand Modeling results from evaluation of Alternate 8 can also be reasonably presumed to apply to this alternative, since these options function similarly. Possible geometric improvements to SR 1 due to increased traffic on this roadway were not investigated during this study, but may be required, thus increasing potential costs of this alternative.

Approximately 71 acres of new R/W would be required, including 0.6 acres of wetlands, with 5 to 10 relocations expected. The total construction cost is estimated at \$36 million (2010 dollars). Due to these impacts, cost, and the fact this alternate does not satisfy purpose and need, this alternative is not recommended for further evaluation.



Figure 3.04-9 Alternate 9

Alternate 10 – New Ohio River Bridge (US 50 to KY 20)

This alternative proposed a new crossing of the Ohio River connecting US 50 in Indiana with I-275 in Kentucky. This alternative included 7 miles of new, four-lane roadway that would improve the Level of Service to an acceptable level in Lawrenceburg.

This option would have significant impacts. Approximately 120 acres of new R/W is required, including 7 to 8 acres of wetlands, with 45 to 50 relocations expected. The construction cost of this option is estimated at \$750 million (yr. 2017 dollars)



Figure 3.04-10 Alternate 10

This alternative satisfies purpose and need by reducing congestion, improving safety at Arch Street, and enhancing the corridor. This alternative is not recommended for further evaluation, however, due to the excessive cost and significant impacts involved.

3.05 SEGMENT 4 – GREENDALE (Arch Street to I-275)

Segment 4 is the easternmost section of the investigated corridor. This segment is defined by Arch Street to the west and I-275 to the east, and has a total length of 1.5 miles. One residence listed on the National Register is located on US 50 within this segment.

Segment 4 currently operates adequately with the exception of the US 50/SR 1/I-275 (Bellevue Road) intersection. This intersection operates at LOS F overall during the PM peak hour. Vehicles making turns at this intersection experience long queues and traffic signal cycle failure (waiting through more than one signal cycle before getting through the intersection). Future traffic levels should be able to function adequately across Segment 4, except for the US 50/SR 1/I-275 intersection, which will experience extreme delays and queuing due to congestion.

Due to the existing and forecasted acceptable LOS of this Segment, only improvement to the intersection of US 50 and I-275 was investigated.



Figure 3.05-1 Segment 4

No-Build Alternative

Since the current intersection operates at LOS F during PM peak hours, a No-Build alternative will not allow for proper flow of traffic in any future scenario. The No-Build alternative will not satisfy purpose and need for this intersection.

Short-Term Improvements

Access Management

Access control and management solutions are recommended for short-term improvements for safety and congestion in this segment. Access management solutions are being considered by the Gateway Study being prepared for OKI and Dearborn County.

Long-Term Improvements

Access Management

Access management solutions should also be considered in any long-term planning for this section. The Gateway Study is expected to provide solutions for such management to improve safety and congestion in this segment.

Intersection Improvements – US 50 at I-275 Interchange

This intersection improvement proposes triple left turn lanes from I-275 west bound and dual left turn lanes for all other movements. This option increases the Level of Service for this intersection to acceptable levels, as shown in Table 3.05.

This proposed improvement will require approximately 4.0 acres of new R/W, with 2 to 3 commercial property relocations. The total construction cost is estimated at \$28 million (yr 2017 dollars).

Since operations assessment of this alternative indicates this will provide an acceptable 2030 level of service, this satisfies purpose and need. This alternative is recommended for advancement and further study.

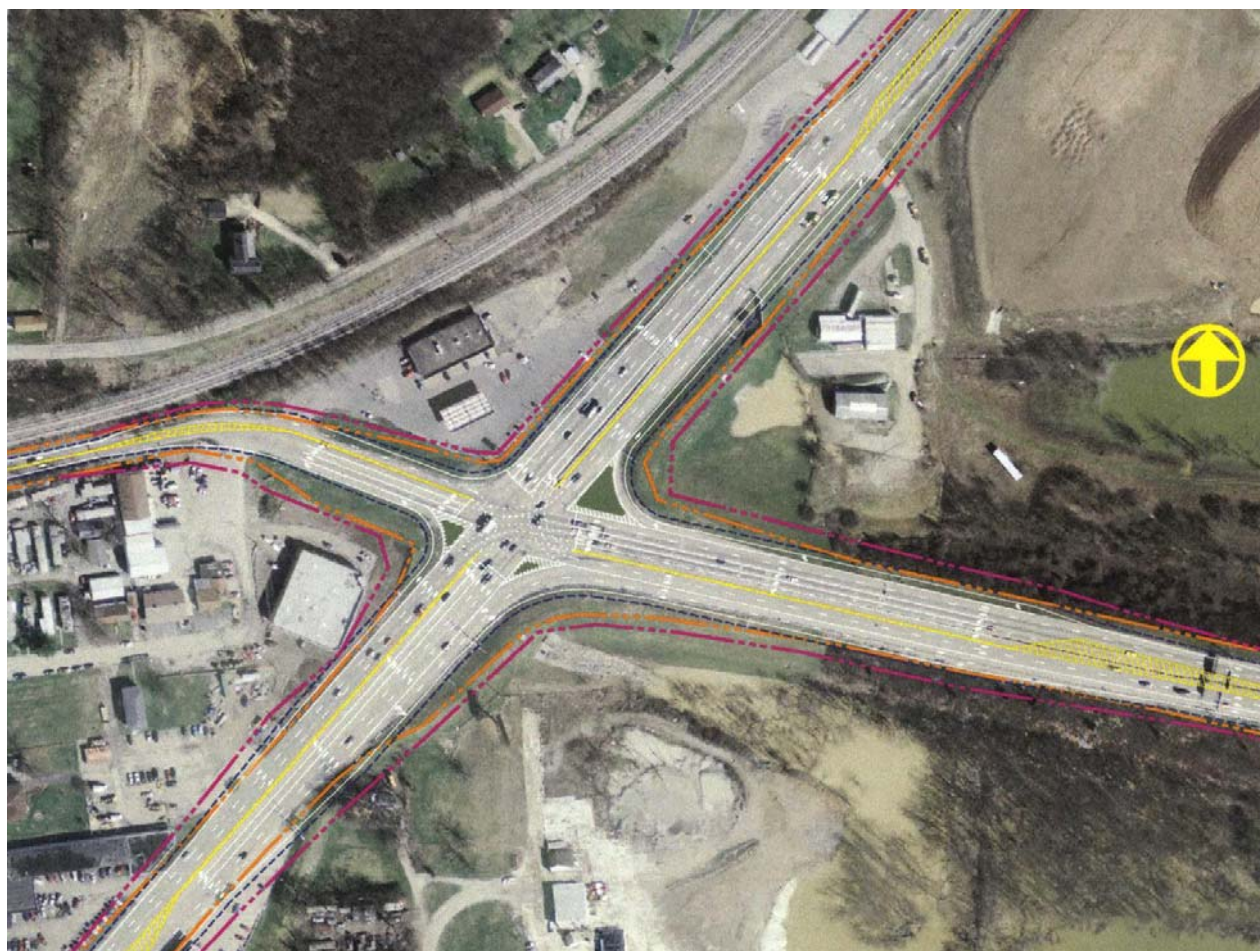


Figure 3.05-2 Intersection Improvement – US 50 at I-275 Interchange

SECTION 4
ENVIRONMENTAL AND CULTURAL CONSIDERATIONS

4.01 ENVIRONMENTAL AND CULTURAL CHARACTERISTICS

A. Physical Environment

Dearborn County lies within the Dearborn Upland physiographic region of Indiana; this is a dissected plateau underlain by flat-lying shales and limestones. The landscape is varied, with large tracts of forested areas punctuated by rolling hills and valleys, as well as flatlands and shoreland area along the Ohio River. Numerous small headwater streams run through the county; Tanner's Creek is the largest stream running through the project area. The US 50 corridor study area generally lies within the flatland area of the county, and none of the recommended alternatives will impact forest land.

Karst topographic features exist in the northwest portion of Dearborn County; no proposed alternatives are located in this section of the county. Since no known karst features exist within the project area, it is not expected there will be any impacts to karst features.

Nearly all of Dearborn County lies within an area of essentially non-aquifer materials. Near the Ohio River, throughout much of the City of Lawrenceburg, a buried sand and gravel aquifer exists. This aquifer varies from 35 to 150 feet in thickness and is typically overlain by clay, silt and fine sand of varying thickness. The buried sand and gravel aquifer is a very productive water-bearing unit. No impact to this aquifer is anticipated from any of the recommended alternatives.

B. Cultural Resources

Dearborn County is part of the Tri-State region and its proximity to the larger metropolis of Cincinnati allows residents to benefit from the more varied and numerous cultural activities found in a larger city. Local attractions such as Argosy Casino and Perfect North Slopes are large tourist attractions; the City of Lawrenceburg is home to the Dearborn County Historical Society Museum, Dearborn Heights Arts Council and County Fairgrounds; various festivals and events occur at the Fairgrounds during the year.

Newtown Park is located along US 50W and Main Street in Lawrenceburg. Right-of-way may have to be acquired for improvements to this stretch of the corridor for Alternatives 1, 5 and 6. No funds from the Land & Water Conservation Act have been used for improvements to this facility.

C. Environmental Justice

The latest census figures for the county are that 98.06% of the population is Caucasian, with the largest minority populations being African-American at 0.62%, followed by Hispanic at 0.58%. Although it is not anticipated that any of the recommended alternatives will present any environmental justice concerns, this issue will be more fully explored when alternatives are moved forward for more in-depth study. Several of the alternatives will require relocations.

D. Terrestrial Habitat/Endangered Species

The project areas for the alternatives that have been selected to move forward occur within the urban areas of Aurora and Lawrenceburg and should not have an adverse effect on terrestrial habitat.

Dearborn County is within the range of the federally endangered Indiana bat (*Myotis sodalis*), the federally threatened bald eagle (*Haliaeetus leucocephalus*), and the federally endangered running

buffalo clover (*Trifolium stoloniferum*). There are no eagle nests in Dearborn County (per the United States Fish and Wildlife Service) and none of the recommended alternatives are known to lie within the habitat of the Indiana bat or running buffalo clover.

E. Archaeological Consideration

A Phase Ia archaeological literature review was completed by Archaeological Consultants of the Midwest, Inc. for the project corridor. This research was conducted as a preliminary check for potential archaeological concerns. The purpose of the review is to determine whether the study area, or any part of it, has been professionally surveyed, and identify documented archaeological sites, architectural properties, cemeteries, sites on or potentially eligible for listing on the National Register, and buildings or structures recorded on the early cartographic sources in the study area.

Based on this research, 40 Phase Ia surveys, 12 Phase Ic surveys, and two Phase II investigations have been undertaken in the study area. 148 sites have been inventoried in the study area, and temporal affiliation of the prehistoric sites indicates the area has been occupied throughout prehistory. Examination of architectural property maps indicate that 135 architectural properties have been documented in the study area. Review of the National Register indicates 15 properties and two historic districts on the Register are located near the corridor. Historic cartographic sources indicate that numerous buildings or structures have been documented in the study area.

Potential impacts to archaeological sites will be investigated further as alternatives are advanced. Additional information on potential historic structure and historic district impacts are discussed in greater detail in Section 4.05 of this report.

F. Floodplains

The majority of the eastern portion of the project corridor lies within the 100-year floodplain. The US 50 and I-275 interchange is within the floodplain, and US 50 exists in the floodplain until approximately one mile west of Aurora, near the intersection of US 50 and Stewart St, with the exception of a short stretch of the roadway in downtown Lawrenceburg. The downtown area is surrounded by a levee, which removes this area from the floodplain. No floodplains exist west of the US 50/Stewart St. intersection. Potential impact from or to the floodplain by recommended alternatives will be investigated further as alternatives are advanced.

G. Air

The sections of US 50 identified in this report as Segments 3 and 4 and the eastern portion of Segment 2 lie within Lawrenceburg Township. Lawrenceburg Township is that portion of Dearborn County which is designated a non-attainment area for ozone and PM_{2.5}. The final design, concept and scope for any alternatives chosen to move forward for further study which lie within Lawrenceburg Township will be required to conform to the State Implementation Plan (SIP) and to be included in OKI's Transportation Improvement Plan.

H. Noise

A formal noise analysis will be required for any alternative which provides new alignment or increases the number of through traffic lanes. Noise abatement measures will be required for any alternative that is found to have a “noise impact” as defined by INDOT’s noise policy.

4.02 PUBLIC INVOLVEMENT

As part of INDOT's policy of public involvement and to ensure that requirements of the National Environmental Policy Act (NEPA) were fulfilled, several opportunities for stakeholder participation have been provided. A Community Advisory Committee (CAC), comprised of local government officials, economic development groups, local businesses, neighborhood groups, and other interested parties in the Dearborn County area was established, and meetings were held to provide both a general vision of the corridor study and to request feedback on potential alternatives developed. The CAC meetings provided stakeholders with the opportunity to evaluate developed alternatives and also to provide alternative solutions.

More general public participation was solicited through the vehicle of Public Information Meetings. Both venues also provided attendees the ability to present written comments which became part of the environmental document of the study. All Public Information meetings and CAC discussions were held in Lawrenceburg.

Section 106 of the National Historic Preservation Act (NHPA) requires that as part of the effort to identify historic properties, those persons or groups who could have meaningful input be given the opportunity to participate as Consulting Parties. The following table lists those persons or groups who were contacted and provided information regarding the US 50 Corridor Study as part of the Section 106 process. The only response received was from the State Historic Preservation Officer, who could not identify any additional organizations to be contacted. Several persons on this list were also invited to participate as part of the CAC group.

Agency	Contact Person	Title	Date Contacted	Response Received
Federal Highway Administration	Robert Tally, Jr.	Division Administrator	11/17/06	none
Indiana Department of Transportation	Ben Lawrence	Environmental Policy Manager	11/17/06	none
Indiana Department of Natural Resources	Kyle Hupner	SHPO	11/17/06	1/19/07
Historic Landmarks Foundation	Kent Abraham		11/17/06	none
	Chris McHenry	Dearborn County Historian	11/17/06	none
Aurora Historic Preservation Commission	Chris Baltz	Chairperson	11/17/06	none
		Director	11/17/06	none
Dearborn County Historic Society	Francis Egner		11/17/06	none
Lawrenceburg Main Street	John Roberts	President	11/17/06	none
Dearborn County Trust for Historic Preservation	Allan Cornelius		11/17/06	none
Carnegie Historic Landmarks Preservation Society	Phyllis McKeown		11/16/06	none
Surveyors Historic Society	Roger Woodfill		11/16/06	none

Table 4.02 – List of Contacts for Section 106 of NHPA

General information on the US 50 Corridor Study is available to everyone via the Internet; the INDOT website has a site dedicated to the US 50 Study. This site provides a schedule of past meeting dates, meeting minutes of CAC and Public Information Meetings, as well as notices of upcoming meeting dates and times. The website also provides the opportunity for the public to e-mail concerns or comments directly to the INDOT Project Manager. The link to the US 50 site is www.in.gov/dot/div/projects/us50/dearborn.

4.03 AGENCIES CONTACTED

Numerous state and federal agencies were contacted during the early coordination phase of this project. The purpose of this coordination is to allow agencies to provide comments and raise questions or concerns regarding the purpose and need of proposed projects, as well as discuss potential environmental and cultural concerns for the projects. The contacted agencies were provided with information packages including early alternatives with preliminary alternative screening information, potential environmental, cultural and historic impacts, and information on the project purpose and need. The following is a list of each agency and person contacted.

Agency	Division	Contact Person	Title	Address
Natural Resource Conservation Service		Ms. Jane Hardisty	State Conservationist	6013 Lakeside Blvd. Indianapolis, IN 46278
Indiana Geological Survey	Environmental Geology Section	Ms. Nancy Hasenmueller	Section Head	611 North Walnut Grove Bloomington, IN 47405
US Department of the Interior	National Park Service	Mr. Ernest Quintana	Regional Director	1709 Jackson Street Omaha, NE 68102
Indiana Department of Transportation	Intermodal Transportation Division	Mr. Jim Keefer	Manager, Aeronautics Section	Indiana Government Center North Room N901 100 North Senate Ave. Indianapolis, IN 46204
Hoosier National Forest		Mr. Kenneth G. Day	Forest Supervisor	811 Constitution Ave. Bedford, IN 47421
US Fish and Wildlife Service	Bloomington Field Office	Mr. Scott E. Pruitt	Field Supervisor	620 South Walker St. Bloomington, IN 47403
Indiana Department of Natural Resources	Division of Fish and Wildlife	Ms. Christie L. Stanifer	Environmental Coordinator	Indiana Government Center South Rm W264, 402 West Washington St. Indianapolis, IN 46204
Federal Highway Administration		Mr. Larry Heil, PE	Project Manager	Federal Office Building 575 N. Pennsylvania St. Indianapolis, IN 46204
Indiana Department of Transportation	Seymour District	Mr. Bob Williams	District Director	P.O. Box 550 Seymour, IN 47274
US Army Corps of Engineers	Louisville District	Mr. Doug Shelton		P.O. Box 53 Louisville, KY 40201
Indiana Department of Environmental Management		Mr. Thomas W. Easterly	Commissioner	Indiana Govt Center North, Rm N1301, 100 North Senate Ave. Indianapolis, IN 46204
Indiana Department of Transportation	Environmental Assessment Section	Mr. Ben Lawrence	Acting Manager	Indiana Government Center North Room N642 100 North Senate Ave. Indianapolis, IN 46204
Environmental Protection Agency, Region V	Environmental Review Section	Ms. Virginia Laszewski	Manager	77 West Jackson Blvd. (B-19J) Chicago, IL 60604

Table 4.03 – List of Agencies Contacted

4.04 AGENCY COMMENTS

Several agencies provided specific comments following review of provided information. In general, limited concerns were raised regarding project alternatives, since the majority of alternatives being advanced for further evaluation involve existing alignments and already disturbed urban areas. The specific comments provided by these agencies are summarized in Table 4.04. Copies of responses are provided in Appendix B.

Agency	Division	Responder	Title	Comments
Natural Resource Conservation Service		Byron Nagle		Byron called with a question regarding possible r/w take of prime farmland. Limited impacts expected
Indiana Geological Survey	Environmental Geology Section	Marni D. Karaffa	Geologist	The activities you have described should not be affected by, nor have an affect on the geology of the area.
US Department of the Interior	National Park Service	No name provided	Regional Environmental Coordinator	No comments on proposed action.
Indiana Department of Transportation	Intermodal Transportation Division	Justin Klump	Project Manager	This project should have no impact on airspace or air navigation
Hoosier National Forest		Keno Cole		No comments on proposed action.
US Fish and Wildlife Service	Bloomington Field Office	Scott E. Pruitt	Field Supervisor	Purpose and Need; No comments: Proposed Alternatives; Concerns raised for fish and wildlife resources regarding wetlands in the areas of Tanners Creek and Wilson and Hogan Creeks-See Appendix B Regulatory Assessment; This proposal will require the formal approval of our agency for construction in a floodway: Natural Heritage Database; To date, no plant or animal species listed as state or federally threatened, endangered, or rare have been reported to occur in the project vicinity: Fish and Wildlife Comments; Extensive Response- See Appendix B
Indiana Department of Natural Resources	Division of Fish and Wildlife	Jon W. Eggen	Environmental Supervisor	No comments on the general environmental impacts of the proposed project- See Appendix B
US Army Corps of Engineers	Louisville District	Phyllis Hockett	Project Manager	Concurrence with alternatives eliminated for further evaluation; Limited concern regarding alternatives proposed for further evaluation- See Appendix B
Environmental Protection Agency, Region V	NEPA Implementation Section	Kenneth Westlake	Chief	Provided general comments on permitting and mitigation of impacts.
Indiana Department of Environmental Management				

Table 4.04 – Specific Agency Comments

4.05 POTENTIAL HISTORIC IMPACTS

Five historic districts are present in the project corridor that have potential to be impacted by proposed projects. These include the Lawrenceburg, Newtown, Aurora, North Aurora and Greendale Historic Districts.

SEGMENT 1 – Dillsboro to Aurora (SR 262 to SR 148)

No improvements, other than access management solutions are proposed for this segment. No historic sites or structures should be affected by implementation of access management strategies.

SEGMENT 2 – Aurora to Lawrenceburg (SR 148 to SR 48)

This Segment encompasses the Aurora and North Aurora Historic Districts. Three proposed improvements are recommended for further evaluation in this Segment.

Transportation System Management (TSM) Concept 11 – Eliminate Left Turn Lanes Except at Major Intersections and Replace TWLTL with Barrier Median

The Aurora Historic District lies to the south of US 50 and should not be affected by this project. The southern boundary of the North Aurora Historic District is adjacent to the westbound lane of US 50. Structures listed as outstanding, notable, or contributing in the D.C. Interim Report are located in this area, however it is not anticipated that any structures will be significantly impacted by this management solution.

Intersection Improvement – US 50 at Wilson Creek Road

No known historic sites, structures, or districts will be impacted by this project.

Intersection Improvement – US 50 at Wal-Mart Entrance

No known historic sites, districts, or structures will be impacted by this project.

SEGMENT 3 – Lawrenceburg (SR 48 to Arch Street)

Three proposed Alternates are recommended for additional evaluation in this Segment. The Lawrenceburg and Newtown historic districts are present in this Segment. It should be noted that the Jennison Guard Site is listed on the National Register. This site is in Lawrenceburg, but the address is restricted, so potential impact to this site is unknown.

Alternate 1 – On-Alignment Capacity Expansion (from 4 to 6 lanes) in Downtown Lawrenceburg

This Alternate is likely to impact structures in the Newtown Historic District listed in the Interim Report as notable or outstanding. No structures listed on the National Register would be affected by this alternative.

Alternate 5 – One-Way Pair (Near North)

This Alternate will impact the Newtown Historic District. However, the construction of the new Tanner's Creek Bridge will have already disturbed some historic structures. No structures currently listed on the National Register are located in the Newtown Historic District. Many community

structures and residences listed as outstanding, notable, and contributing are located in this stretch of US 50.

Alternate 6 – One-Way Pair (Mid North)

As with Alternate 5, this alternate will impact the Newtown Historic District. The construction of the new Tanner's Creek Bridge will have already disturbed some historic structures, prior to construction of this project. No structures currently listed on the National Register are located in the Newtown Historic District. Many community structures and residences listed as outstanding, notable, and contributing are located in this stretch of US 50.

Discarded Alternates and TSM Concepts from this Segment were also reviewed for potential Historic Structure/District Impacts.

Alternate 4 – One-Way Pair (South)

This discarded alternative would have significant impact to the Lawrenceburg Historic District and some disturbance of the Newtown Historic District located north of US 50.

Alternate 7 – One-Way Pair (Far North)

This discarded alternative would have significant impacts to historic structures located in the Newtown and Lawrenceburg Historic Districts, as well as structures located on Ridge Avenue.

Alternate 8 – SR 1 to SR 48 Connector (Nowlin Avenue)

Several structures listed in the Dearborn County Interim Report could be impacted by construction of this alternative.

Alternate 9 - SR 1 to SR 48 Connector (Indiana Glass)

Depending on final alignment, some historic structures located in the eastern section of the project area could be impacted.

Alternate 10 – New Ohio River Bridge (US 50 to KY 20)

This discarded alternative would have impact on one historic district in Aurora. Potential impacts to structures in Kentucky were not investigated.

TSM Concept 2 – No Left Turn Lanes in Downtown Lawrenceburg

This discarded alternative could potentially impact historic structures due to increased traffic.

TSM Concept 3 – Reversible Lanes in Downtown Lawrenceburg

This discarded alternative was to impact not known historic sites, structures or districts.

SEGMENT 4 – Greendale (Arch Street to I-275)

Intersection Improvements – US 50 at I-275 Interchange

One structure listed on the National Register is located in this segment. However, this structure lies outside of the I-275 intersection area and should not be affected by modification to the intersection.

4.06 POTENTIAL WETLAND IMPACTS

A brief discussion of potential wetland acreage to be impacted by proposed improvements follows:

SEGMENT 1 – Dillsboro to Aurora (SR 262 to SR 148)

No improvements are proposed for this segment; therefore, no wetlands have potential to be impacted.

SEGMENT 2 – Aurora to Lawrenceburg (SR 148 to SR 48)

Travel System Management (TSM) Concept 11 – Eliminate Left Turn Lanes Except at Major Intersections and Replace TWLTL with Barrier Median

This project does not have the potential to impact wetlands.

Intersection Improvement – US 50 at Wilson Creek Road

This proposed improvement will likely disturb 0.3 acres of wetlands.

Intersection Improvement – US 50 at Wal-Mart Entrance

This proposed improvement does not have the potential to disturb wetlands.

SEGMENT 3 – Lawrenceburg (SR 48 to Arch Street)

Alternate 1 – On-Alignment Capacity Expansion (from 4 to 6 lanes) in Downtown Lawrenceburg

This proposed Alternate has no potential to impact wetland acreage.

Alternate 5 – One-Way Pair (Near North)

This proposed Alternate will likely disturb 0.3 acres of wetlands.

Alternate 6 – One-Way Pair (Mid North) – Possible Two-Way

This proposed Alternate has no potential to impact wetland acreage.

SEGMENT 4 – Greendale (Arch Street to I-275)

No wetlands are present in the area of the proposed *Intersection Improvements – US 50 at I-275 Interchange* proposed for this Segment.

4.07 REGULATORY DATABASE REVIEW

A review of environmental database records maintained by state and federal agencies was conducted by FirstSearch Technology Corporation which provided coverage for the entire project corridor from Dillsboro to I-275. The search included a one-mile area on each side of the existing alignment of US 50 in order to obtain information on potential sites of environmental concern for proposed project alternatives.

The following tables summarize sites of potential environmental concern for each proposed alternative. Only those sites identified along proposed alignments or within 1/8-mile of each alignment are listed in the tables. The following databases and their abbreviations are used:

NPL:	EPA NATIONAL PRIORITY LIST – Database of confirmed, proposed, or deleted Superfund sites
CERCLIS:	EPA COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM – Database of current and potential Superfund sites currently or previously proposed for investigation
NFRAP:	EPA COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM ARCHIVED SITES – Database of Archived designated CERCLA sites that, to the best of EPA's knowledge, assessment has been completed and has determined no further steps will be taken to list this site on the NPL. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site
RCRA TSD:	EPA RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM TREATMENT STORAGE AND DISPOSAL FACILITIES – Database of facilities licensed to store, treat and dispose of hazardous waste materials
RCRA COR:	EPA RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES – Database of RCRA facilities with reported violations and subject to corrective action
RCRA GEN:	EPA RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES – Database of facilities that generate or transport hazardous waste or meet other RCRA requirements. LGN – Large Quantity Generator; SGN – Small Quantity Generator; VGN – Conditionally Exempt Generator; Included are RAATS (RCRA Administrative Action Tracking System) and CMEL (Compliance Monitoring & Enforcement List) facilities
ERNS:	EPA/NRC EMERGENCY RESPONSE NOTIFICATION SYSTEM – Database of emergency response actions. Data since January 2001 has been received from the National Response System database as the EPA no longer maintains this data
STATE SITES:	IDEM HAZARDOUS WASTE INVENTORY SITE LISTING – Database of hazardous waste sites that have made the state's inventory list.

SWL:	IDEM PERMITTED SOLID WASTE FACILITIES LIST – Database of permitted landfills and transfer stations
OTHER:	IDEM COMMUNITY RIGHT TO KNOW (CRTK) – Database of all CRTK facilities in the IDEM database that have submitted Tier II forms for 2001 and 2002. SEED COMMISSIONERS DATABASE OF PESTICIDES – Database of commercial applicators and restricted use dealers of pesticides for the State of Indiana
UST:	IDEM UNDERGROUND STORAGE TANK REPORT – Database of all underground storage tanks registered with IDEM
LUST:	IDEM LEAKING UNDERGROUND STORAGE TANK REPORT – Database of all open, closed, and deactivated leaking underground storage tanks in the IDEM database

SEGMENT 1 – Dillsboro to Aurora (SR 262 to SR 148)

The “No-Build” alternative is the preferred alternative for this Segment; therefore, no potential sites of environmental concern were identified. Access management controls being investigated for short- and long-term transportation improvements should not be impacted by potential hazardous waste sites.

SEGMENT 2 – Aurora to Lawrenceburg (SR 148 to SR 48)

Transportation System Management (TSM) Concept 11 – Eliminate Left Turn Lanes Except at Major Intersections and Replace TWLTL with Barrier Median

Database	NPL	CERCLIS	NFRAP	RCRA TSD	RCRA GEN	ERNS	State Sites	SWL	Other	UST	LUST
On Alignment	0	0	0	0	1	0	0	0	1	5	4
<1/8-mile	0	0	0	0	2	1	1	0	3	8	9

Table 4.07-1 Potential Sites of Environmental Concern – TSM Concept 11*Intersection Improvement – US 50 at Wilson Creek Road*

Database	NPL	CERCLIS	NFRAP	RCRA TSD	RCRA GEN	ERNS	State Sites	SWL	Other	UST	LUST
On Alignment	0	0	0	0	0	1	0	0	1	0	0
<1/8-mile	0	0	0	0	0	1	0	0	0	0	0

Table 4.07-2 Potential Sites of Environmental Concern – Intersection Improvement- US 50 at Wilson Creek Road

Database	NPL	CERCLIS	NFRAP	RCRA TSD	RCRA GEN	ERNS	State Sites	SWL	Other	UST	LUST
On Alignment	0	0	0	0	0	1	0	0	1	0	0
<1/8-mile	0	0	0	0	0	1	0	0	0	0	0

Table 4.07-3 Potential Sites of Environmental Concern – Intersection Improvement- US 50 at Wal-Mart Entrance

Intersection Improvement – US 50 at Wal-Mart Entrance

SEGMENT 3 – Lawrenceburg (SR 48 to Arch Street)

Database	NPL	CERCLIS	NFRAP	RCRA TSD	RCRA GEN	ERNS	State Sites	SWL	Other	UST	LUST
On Alignment	0	0	0	0	1	1	0	0	1	7	4
<1/8-mile	0	0	0	0	2	3	1	0	4	10	9

Table 4.07-4 Potential Sites of Environmental Concern – Alternate 1

Alternate 1 – On-Alignment Capacity Expansion (from 4 to 6 lanes) in Downtown Lawrenceburg

Database	NPL	CERCLIS	NFRAP	RCRA TSD	RCRA GEN	ERNS	State Sites	SWL	Other	UST	LUST
On Alignment	0	0	0	0	0	1	0	0	0	2	1
<1/8-mile	0	0	0	0	1	2	1	0	2	3	2

Table 4.07-5 Potential Sites of Environmental Concern – Alternate 5

Alternate 5 – One-Way Pair (Near North)

Alternate 6 – One-Way Pair (Mid North)

SEGMENT 4 – Greendale (Arch Street to I-275)

Database	NPL	CERCLIS	NFRAP	RCRA TSD	RCRA GEN	ERNS	State Sites	SWL	Other	UST	LUST
On Alignment	0	0	0	0	0	1	0	0	0	1	0
<1/8-mile	0	0	0	0	0	1	0	0	1	1	1

Table 4.07-7 Potential Sites of Environmental Concern – Intersection Improvements- US 50 at I-275 Interchange

Intersection Improvements – US 50 at I-275 Interchange proposed for this Segment.

Database	NPL	CERCLIS	NFRAP	RCRA TSD	RCRA GEN	ERNS	State Sites	SWL	Other	UST	LUST
On Alignment	0	0	0	0	0	1	0	0	0	2	1
<1/8-mile	0	0	0	0	1	2	1	0	2	3	2

Table 4.07-6 Potential Sites of Environmental Concern – Alternate 6

SECTION 5
RECOMMENDATIONS

5.01 RECOMMENDATIONS

Operations and travel modeling indicate that improvements to the existing US 50 corridor are essential to reduce congestion, improve safety, and enhance US 50 as a Statewide Mobility Corridor. After analysis of several alternatives, the following recommended alternatives are provided for further evaluation. These are divided into each segment of the corridor as described in the report, and are further divided into short- and long-term recommended improvements.

Included with recommendations is the level of environmental documentation that will likely be required to advance each recommended alternative. The level of documentation is determined by the cultural and environmental impacts of a particular alternative. Possible documentation requirements are Level 1, 2, 3 and 4 Categorical Exclusion (CE) documentation, to preparation of an Environmental Assessment (EA) or Environmental Impact Statement (EIS). CE Documentation ranges from Level 1 CE, for projects requiring no relocations, less than 0.5 acres new R/W, and other limited impacts, up to Level 4, for projects with greater than 10 relocations, partial new alignment, and more significant impacts. EA documentation is required for projects with significant impacts and new alignments, while EIS documents are necessary for projects with severe cultural, R/W, and environmental impacts. None of the recommended alternatives from this study are likely to require EA or EIS documentation; Alternate #1 is expected to require Level 4 CE documentation, but could rise to an EA if significant environmental issues are discovered.

Segment 1 – Dillsboro to Aurora (SR 262 TO SR 148)

Operations modeling using Highway Capacity Software indicate this Segment 1 should continue to operate with little or no congestion through both the AM and PM peak hours using 2030 forecasted traffic volumes. To increase safety of the corridor, access management solutions are recommended as both short- and long-term improvements for this segment.

Short- and Long-Term Improvements

Access management solutions for short- and long-term improvements have been developed through the Gateway Study, prepared by ME Companies for OKI and Dearborn County. Recommendations of this study include combining existing access points where possible, encouraging new developments to access existing intersecting roads, connecting existing or constructing new frontage roads, restricting or eliminating left turn movements, adding center medians, installing curbing to eliminate existing access points, adding traffic signals at significant intersections, removing or adding center median breaks, and adding or widening existing sidewalks.

Specific recommendations from the Gateway Study are contained on a series of graphic maps which detail the type and location of specific improvements for each segment. None of the specific improvements from this study rise to the level of a Project of Independent Utility, however. The Gateway Study should be consulted to determine the specific recommendations for this Segment. As access density decreases, safety and LOS for this segment will improve.

Segment 2 – Aurora to Lawrenceburg (SR 148 to SR 48)

The projected 2030 LOS for the section of US 50 from SR 148 to Wilson Creek Road diminishes to LOS D, presuming no improvements are completed. Additionally, the US 50 and Wilson Creek Road, US 50 and Wal-Mart Entrance, and US 50 and SR 48 intersections all experience movements with LOS F, while overall intersection operations will experience an LOS of F. Since these levels of service are not acceptable and purpose and need are not met, the following recommendations are provided:

Short-term Improvements

Transportation System Management (TSM) Concept 11 – Eliminate Left Turn Lanes Except at Major Intersections and Replace TWLTL with Barrier Median

This management solution covers a length of 2.5 miles from SR 350 to SR 48. The proposed improvement would eliminate left turn lanes except at major intersections. Also suggested is a replacement of two-way left turn lanes with a barrier median. This solution provides encouragement of future access management solutions, such as combining existing access points wherever possible, encouraging new developments to access existing intersecting roads, and connecting existing frontage roads.

Since this eliminates non-signalized left turns in the corridor, engineering judgment suggests this will provide an acceptable level of service and will improve safety within this section. This serves to enhance the Statewide Mobility Corridor and thus, satisfies purpose and need. TSM Concept 11 is recommended for further evaluation.

Long-Term Improvements

Intersection Improvement – US 50 at Wilson Creek Road

The proposed improvement includes dual left turn lanes from Wilson Creek Road and US 50. The length of the project is 1500 feet on US 50 and 700 feet on Wilson Creek Road. This project will

Location	Intersection Operations			
	AM Peak Hour		PM Peak Hour	
	Overall Intersection Ops	LOS D Movement(s)	Overall Intersection Ops	LOS D Movement(s)
US 50 and Wilson Creek Road	LOS B		LOS D	NBL SBT EBL, EBR

Note: NBL = Northbound Left SBT = Southbound Through
EBL = Eastbound Left EBR = Eastbound Right

Table 5.01-1 2030 Wilson Creek Road Improved Intersection Operations from Synchro

provide additional capacity and will improve the 2030 Level of Service at the intersection to an acceptable level, which satisfies purpose and need for this section. Projected 2030 levels of service for overall intersection operations and specific movements within the intersection, following recommended improvement, are provided in Table 5.01-1. It is anticipated that this alternative would require Level 2 CE documentation based on amount of R/W required.

Intersection Improvement – US 50 at Wal-Mart Entrance

The proposed improvement includes dual left turn lanes from Wal-Mart and US 50 east bound and

Location	Intersection Operations			
	AM Peak Hour		PM Peak Hour	
	Overall Intersection Ops	LOS D Movement(s)	Overall Intersection Ops	LOS D Movement(s)
US 50 and Wal-Mart Entrance	LOS A		LOS C	NBL SBL, SBR EBL WBL, WBT

Note: NBL = Northbound Left SBL = Southbound Left SBR = Southbound Right
EBL = Eastbound Left WBL = Westbound Left WBT = Westbound Through

Table 5.01-2 2030 Wal-Mart Improved Intersection Operations from Synchro

exclusive right turns from US 50 west bound. North and south bound turning movements will also be eliminated, which will simplify signal phasing. This project will provide additional capacity at the intersection and will improve the 2030 Level of Service at the intersection to an acceptable level. Projected 2030 levels of service for overall intersection operations and specific movements within the intersection, following proposed intersection improvements, are provided in Table 5.01-2. It is anticipated that this alternative would require Level 3 CE documentation, at a minimum.

Segment 3 – Lawrenceburg (SR 48 to Arch Street)

Segment 3 experiences significant congestion at the US 50 and SR 48 intersection during the existing AM peak hour, while other locations function adequately. The existing PM peak hour sees more congestion at all locations and significant friction for turning movements across the highway. The US 50/SR 48 intersection currently operates at LOS E overall. Forecasted traffic volumes will create overall failure of the SR 48 and Main Street intersections during the PM peak hour in 2030, while the Front Street intersection will operate at LOS E. Queuing will also become a serious concern causing intersection blockage and impairing corridor safety. The SR 48 intersection is currently being relocated and constructed west of the existing intersection. This project will be completed by June 2007.

As this Segment poses the most significant current and future concern for LOS and safety, numerous alternatives were investigated during this study. Three separate long-term improvement alternatives are recommended for further evaluation; each alternative satisfies purpose and need, while minimizing construction impacts versus other alternatives considered. A summary table of construction costs and potential impacts for these three alternatives is provided in Table 5.01-3. The following alternatives are recommended for further evaluation:

Short-Term Improvements

TSM Concept 2 – No Left Turns Allowed in Downtown Lawrenceburg

This Transportation System Management concept creates two-phase signals and increases capacity through Lawrenceburg. Since left turns will be prohibited, vehicles would be required to turn right and circle the block to reach an intended destination.

This solution, although providing short-term improvements, is not expected to be sufficient to improve operations to LOS D or better. This project is recommended for further evaluation as a short-term solution to congestion for downtown Lawrenceburg, due to the ability to complete the project in a short timeframe and the low cost and minimal impacts of the alternative. Ultimately, however, long-term solutions must also be considered.

Long-Term Improvements

A total of three long-term improvements are recommended for further evaluation for Segment 3. Each alternative has merit, and final determination of the best alternative should occur after more exhaustive analysis.

Alternate	New R/W Area	No. Bldg. Disturbed	Wetland Disturbed (acres)	Historic Structures/ Districts	Cost (\$) Millions
Alternate 1 - On-Alignment Capacity Expansion in Downtown Lawrenceburg	4.0	10 to 15	0.0	10-15 Sites/ 2 Districts	20
Alternate 5 - One-Way Pair (Near North)	1.5	4 - 5	0.3	20-25 Sites/ 2 Districts	24
Alternate 6 - One-Way Pair (Mid North)	6.2	5 to 10	0.0	20-25 Sites/ 2 Districts	25

Table 5.01-3 Summary of Environmental and Cultural Considerations for Preferred Alternatives – Segment 3

Alternate 1 – On-Alignment Capacity Expansion (from 4 to 6 lanes) in Downtown Lawrenceburg

This solution requires three through lanes plus dual left turn lanes and exclusive right turn lanes at major intersections in the City of Lawrenceburg. The proposal addresses congestion through Lawrenceburg and improves the 2030 LOS to an acceptable level. The projected overall intersection levels of service and specific movements of LOS D within each intersection are

Location	Intersection Operations			
	AM Peak Hour		PM Peak Hour	
	Overall Intersection Ops	LOS D Movement(s)	Overall Intersection Ops	LOS D Movement(s)
US 50 and Main Street	LOS B		LOS A	
US 50 and Front Street	LOS B	NBL SBL	LOS D	NBL, NBT SBL, EBT
US 50 and Walnut Street	LOS A	NBL SBL	LOS A	NBL SBL
US 50 and Arch Street	LOS A	WBL	LOS A	SBL, EBL WBL
US 50 and Argosy Parkway	LOS B	NBL, SBL EBL, WBL	LOS B	NBL, SBL EBL, WBL

Note: NBL = Northbound Left NBT = Northbound Through SBL = Southbound Left
EBL = Eastbound Left EBT = Eastbound Through WBL = Westbound Left

Table 5.01-4 2030 Alternative 1 Intersection Operations from Synchro

provided in Table 5.01-4 below. These figures presume the capacity expansion project is completed,

The safety need for this project is satisfied by improvements to the Arch Street Intersection. Congestion and corridor improvements also satisfy need. As this project satisfies purpose and need for improvement of the corridor, Alternative 1 is recommended for further evaluation. It is anticipated that this alternative would require Level 4 CE documentation at a minimum.

Alternate 5 – One-Way Pair (Near North)

This Alternate proposes a one-way pair to the near north of US 50 through Lawrenceburg that provides three-lane, one-way streets with short turn lanes at intersections. This option covers a total length of 1.1 miles and requires new roadway construction and local street reconfiguration.

The projected overall intersection levels of service, ranging from LOS A to LOS C, and specific

Location	Intersection Operations			
	AM Peak Hour		PM Peak Hour	
	Overall Intersection Ops	LOS F Movement(s)	Overall Intersection Ops	LOS F Movement(s)
US 50 and Main Street	LOS B		LOS C	
Main Street and Fourth Street	LOS A		LOS B	
US 50 and Front Street	LOS A		LOS B	
Front Street and Fourth Street	LOS B		LOS B	
US 50 and Walnut Street	LOS A		LOS A	
US 50 and Arch Street	LOS A		LOS A	
US 50 and Argosy Parkway	LOS B	NBL, SBL EBL, WBL	LOS B	NBL, SBL EBL, WBL

Note: NBL = Northbound Left SBL = Southbound Left
EBL = Eastbound Left WBL = Westbound Left

Table 5.01-5 2030 Alternative 5 Intersection Operations from Synchro

movements of LOS F within each intersection are provided in Table 5.01-5 below.

The travel demand and operations modeling both prove a strong need for improvements in this Segment and both show improved operations and decreases in congestion with construction of this alternative. As this alternative provides improvements at generally lower cost than other alternatives for this Segment, and expected impacts are generally lower, Alternative 5 is recommended for additional evaluation. It is anticipated that this alternative would require a minimum of Level 3 CE documentation.

Alternate 6 – One-Way Pair (Mid North)

This new roadway alternative proposes a mid-north pair of three-lane, one-way streets with short turn lanes at intersections. This 1.2-mile option provides acceptable levels of service along US 50 through the City of Lawrenceburg. The projected, post-construction overall intersection levels of service, which range from LOS A to LOS C, and specific movements of LOS D for each

Location	Intersection Operations			
	AM Peak Hour		PM Peak Hour	
	Overall Intersection Ops	LOS D Movement(s)	Overall Intersection Ops	LOS D Movement(s)
US 50 and Main Street	LOS B		LOS B	
Main Street and Fourth Street	LOS B		LOS C	
Main Street and Ridge Avenue	LOS B	WBT	LOS C	
US 50 and Front Street	LOS A		LOS B	
Front Street and Fourth Street	LOS A		LOS A	
US 50 and Walnut Street	LOS A		LOS A	
US 50 and Arch Street	LOS A		LOS A	
US 50 and Argosy Parkway	LOS B	NBL, SBL EBL, WBL	LOS B	NBL, SBL EBL, WBL

Note: NBL=Northbound Left SBL = Southbound Left EBL = Eastbound Left
WBL = Westbound Left WBT = Westbound Through

Table 5.01-6 2030 Alternative 6 Intersection Operations from Synchro

intersection are provided in Table 5.01-6 below.

Operations modeling for this alternative indicates this project will result in acceptable 2030 levels of service to downtown Lawrenceburg, while improving safety at Arch Street. Additionally, Travel Demand Modeling results for Alternate 5 can be reasonably assumed to apply to Alternate 6, since these options function essentially the same. As this Alternative satisfies purpose and need and has lower cost and environmental and cultural impacts, this project is recommended for further evaluation for improvement of the corridor. It is anticipated that this alternative would require Level 3 or Level 4 CE documentation, depending on the actual number of relocations required.

Segment 4 – Greendale (Arch Street to I-275)

Segment 4 currently operates adequately with the exception of the US 50/SR 1/I-275 (Bellevue Road) intersection. This intersection operates at LOS F overall during the PM peak hour. Vehicles making turns at this intersection experience long queues and traffic signal cycle failure. Future traffic levels should be able to function adequately across Segment 4, except for the US 50/SR 1/I-275 intersection, which will experience extreme delays and queuing due to congestion.

Short-Term Improvements

Access Management

Access control and management solutions are recommended for short-term improvements for safety and congestion in this segment. Access management solutions have been developed by the Gateway Study prepared for OKI and Dearborn County.

Long-Term Improvements

Access Management

Access management solutions should also be considered in any long-term planning for this section. The Gateway Study provides solutions for such management to improve safety and congestion in this segment. This study should be consulted for specific access management recommendations

Intersection Improvements – US 50 at I-275 Interchange

This intersection improvement proposes triple left turn lanes from I-275 west bound and dual left turn lanes for all other movements. This option increases the 2030 overall Level of Service for this

Location	Intersection Operations			
	AM Peak Hour		PM Peak Hour	
	Overall Intersection Ops	LOS D Movement(s)	Overall Intersection Ops	LOS D Movement(s)
US 50 and SR 1/ Bellevue Ave.	LOS C	NBL, SBL EBL	LOS C	NBL, SBL, SBT EBL, EBT, WBL
Note: NBL = Northbound Left SBL = Southbound Left SBT = Southbound Through EBL = Eastbound Left EBT = Eastbound Through WBL = Westbound Left				
Table 5.01-7 2030 US 50 and I-275 Improved Intersection Operations from Synchro				

intersection to LOS C for the AM and PM Peak Hours, as shown in Table 5.01-7.

Since operations assessment of this alternative indicates this will provide an acceptable 2030 level of service, this satisfies purpose and need. This alternative is recommended for advancement and further study. It is anticipated that this alternative would require Level 2 or Level 3 CE documentation, depending on the actual number of relocations required.

5.02 SUMMARY OF PROJECTS OF INDEPENDENT UTILITY

Summary sheets of each project of independent utility follow. For Segment 3, in which this study recommends three alternatives for further study, each alternative is presented on a separate sheet. One of these three alternatives should be selected for programming.

**Project of Independent Utility
TSM Concept 11
Eliminate Left Turn Lanes
US 50 from SR 350 to SR 48**

Dearborn County, Indiana

Proposed Improvement: Eliminate Left Turn Lanes except at Major Intersections and Replace Two-Way Left Turn Lane with Barrier Median

Purpose and Need: Improves Congestion and Increases Safety

Priority: Medium

Programming: Since the majority of intersections within this segment of US 50 currently operate at an acceptable Level of Service (LOS), this project is not one of immediate need. Analysis during needs assessment indicate traffic flow will deteriorate by 2030, however. Due to projected failure of intersections and poor corridor operations, this project is one that should be programmed for completion in the near future. Other specific intersection improvements in this section (US 50 and Wilson Creek Road and US 50 and Wal-Mart Entrance) are proposed as separate Projects of Independent Utility that should be considered for immediate programming.

Project Description: This management solution covers a length of 2.5 miles from SR 350 to SR 48. The proposed improvement would eliminate left turn lanes except at major intersections. Also

suggested is a replacement of two-way left turn lanes with a barrier median. This solution provides encouragement of future access management solutions, such as combining existing access points wherever possible, encouraging new developments to access existing intersecting roads, and connecting existing frontage roads.

Preliminary Cost:
\$5,000,000 (2017 dollars)



**Figure 5.02-1 TSM Concept 11 – Eliminate Left Turn Lanes;
SR 350 to SR 38**

**Project of Independent Utility
Intersection Improvement
US 50 and Wilson Creek Road**

Dearborn County, Indiana

Proposed Improvement: Intersection Improvement: US 50 and Wilson Creek Road

Purpose and Need: Improves Congestion and Increases Safety

Priority: High

Programming: The need for improvement of the intersection of US 50 and Wilson Creek Road currently exists. Existing overall PM Peak Hour LOS is D, while east-bound left movement is LOS F. This intersection will experience overall LOS F for the PM Peak Hour by 2030. Since this intersection currently warrants improvement to enhance mobility through the US 50 corridor, the proposed project is one which should be programmed for completion in the very near future.

Project Description: The proposed improvement includes dual left turn lanes from Wilson Creek Road and US 50. The length of the project is 1500 feet on US 50 and 700 feet on Wilson Creek Road. Impacts for the project include the need for an additional 2.5 acres of R/W, including disturbance of 0.3 acres of wetland, and elimination of approximately 30 parking spaces.

Preliminary Cost:
\$8,400,000
(2017 dollars)

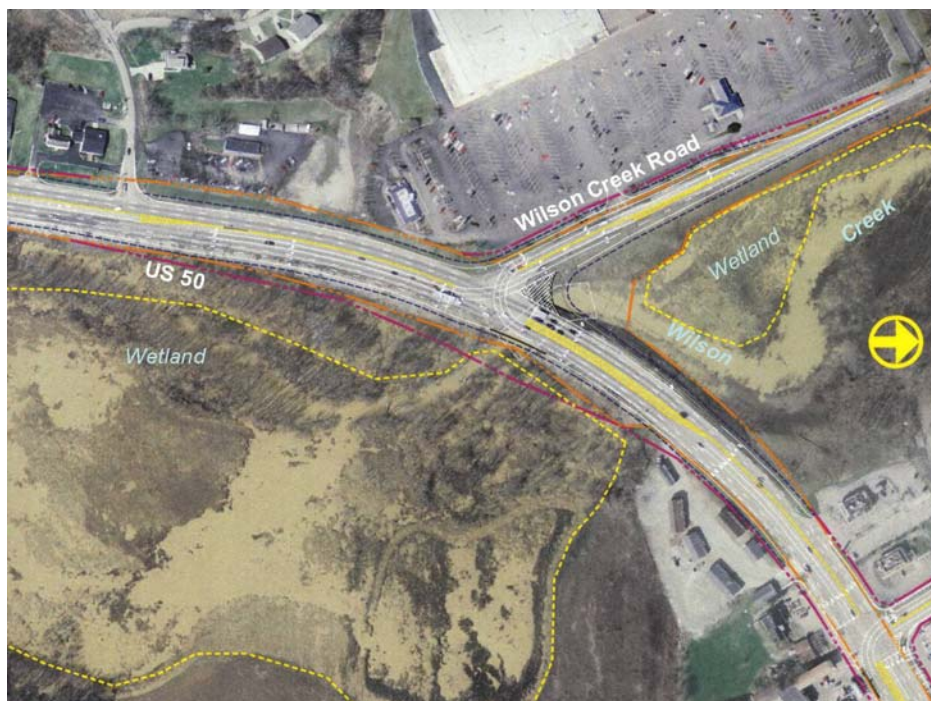


Figure 5.02-2 Intersection Improvement: US 50 and Wilson Creek Road

**Project of Independent Utility
Intersection Improvement
US 50 and Wal-Mart Entrance**

Dearborn County, Indiana

Proposed Improvement: Intersection Improvement: US 50 and Wal-Mart Entrance

Purpose and Need: Improves Congestion and Increases Safety

Priority: High

Programming: The need for improvement of the intersection of US 50 and the Wal-Mart Entrance is substantiated by the projected future LOS F. Since this intersection currently warrants improvement to enhance mobility through the US 50 corridor, the proposed project is one which should be programmed for completion in the very near future.

Project Description: The proposed improvement includes dual left turn lanes from Wal-Mart and US 50 east bound and exclusive right turns from US 50 west bound. North and south bound turning movements will also be eliminated, which will simplify signal phasing. This project will have significant business impacts to one or both sides of US 50 and will require approximately 2.0 acres of new R/W. No wetland impacts are expected for this proposed project.



Preliminary Cost:
\$6,700,000
(2017 dollars)

Figure 5.02-3 Intersection Improvement: US 50 and Wal-Mart Entrance

**Project of Independent Utility
TSM Concept 2
No Left Turns Allowed in Downtown Lawrenceburg**

Dearborn County, Indiana

Proposed Improvement: Elimination of Left Turns in Downtown Lawrenceburg

Purpose and Need: Improves Congestion, Increases Safety, Enhances Corridor

Priority: High

Programming: The need for improvement of US 50 through downtown Lawrenceburg is well established through analysis of existing and future corridor and intersection operations. Three long-term alternatives are proposed for US 50 through Lawrenceburg to reduce congestion and improve safety. However, due to significant cost, R/W requirements, etc., major improvements to the corridor will take considerable time to complete. This project is one which will improve LOS and safety of the corridor, but is intended as a short-term solution before one of the three long-term solutions is decided upon and constructed. This solution should be programmed as a high priority project.

Project Description: This Transportation System Management concept creates two-phase signals and increases capacity through Lawrenceburg. Since left turns will be prohibited, vehicles

would be required to turn right and circle the block to reach an intended destination. This solution, although providing short-term improvement, is not expected to be sufficient to improve operations to LOS D or better. Minimal impacts on US 50 are expected, but secondary impacts to other local streets and local businesses may be significant.

Preliminary Cost:

\$400,000

(2008 dollars)



Figure 5.02-4 TSM Concept 2 – No Left Turns Allowed in Downtown Lawrenceburg

**Project of Independent Utility
Alternate #1
On-Alignment Capacity Expansion (from 4 to 6 lanes)
In Downtown Lawrenceburg
Dearborn County, Indiana**

Proposed Improvement: US 50 Added travel lanes (from 4 to 6) in downtown Lawrenceburg

Purpose and Need: Improves Congestion, Increases Safety, Enhances Corridor

Priority: High

Programming: The need for improvement of US 50 through downtown Lawrenceburg is well established through analysis of existing and future corridor and intersection operations. This project is one of three alternatives proposed for the segment of US 50 through Lawrenceburg. One of the three alternatives should be chosen and programmed for construction as a high priority project.

Project Description: This solution requires three through lanes plus dual left turn lanes and exclusive right turn lanes at major intersections in the City of Lawrenceburg. Alternate 1 will have

major business impacts on the north side of US 50 and will require approximately 4.0 acres of new R/W. This alternative is expected to require 10 to 15 relocations and impact a minimum of 10 historic structures in two historic districts.

Preliminary Cost:
\$20,000,000
(2017 dollars)



Figure 5.02-5 Alternate 1

**Project of Independent Utility
Alternate #5
One-Way Pair (Near North)
Dearborn County, Indiana**

Proposed Improvement: Added One-Way Pair: US 50 in Downtown Lawrenceburg

Purpose and Need: Improves Congestion, Increases Safety, Enhances Corridor

Priority: High

Programming: The need for improvement of US 50 through downtown Lawrenceburg is well established through analysis of existing and future corridor and intersection operations. This project is one of three alternatives proposed for the segment of US 50 through Lawrenceburg. One of the three alternatives should be chosen and programmed for construction as a high priority project.

Project Description: This Alternate proposes a one-way pair to the near north of US 50 through Lawrenceburg that provides three-lane, one-way streets with short turn lanes at intersections. This project covers a total length of 1.1 miles and requires new roadway construction and local street reconfiguration. It is expected to require 1.5 acres of new R/W, including 0.3 acres of wetlands. Alternate 5 will also require 4 to 5 relocations and, if constructed today, would impact a minimum of twenty structures listed as notable, outstanding or contributing in the Dearborn County Interim Report.

Impacts to historic structures should be less for this project, presuming the proposed additional bridge over Tanner's Creek is constructed prior to this project.

Preliminary Cost:
\$24,000,000
(2017 dollars)



Figure 5.02-6 Alternate 5

**Project of Independent Utility
Alternate #6
One-Way Pair (Mid North)
Dearborn County, Indiana**

Proposed Improvement: Added One-Way Pair: US 50 in Downtown Lawrenceburg

Purpose and Need: Improves Congestion, Increases Safety, Enhances Corridor

Priority: High

Programming: The need for improvement of US 50 through downtown Lawrenceburg is well established through analysis of existing and future corridor and intersection operations. This project is one of three alternatives proposed for the segment of US 50 through Lawrenceburg. One of the three alternatives should be chosen and programmed for construction as a high priority project.

Project Description: This new roadway alternative proposes a mid-north pair of three-lane, one-way streets with short turn lanes at intersections. Since new roadway will be constructed for this alternative, extensive R/W (approximately 6.2 acres) will be required, along with 5 to 10 relocations. A significant number of structures listed as notable or outstanding in the Dearborn County Interim report would be impacted.



Figure 5.02-7 Alternate 6

Preliminary Cost:
\$25,000,000
(2017 dollars)

**Project of Independent Utility
Intersection Improvement
US 50 at I-275 Interchange**

Dearborn County, Indiana

Proposed Improvement: Intersection Improvement: US 50 and I-275 Interchange

Purpose and Need: Improves Congestion, Increases Safety, Enhances Corridor

Priority: High

Programming: The need for immediate improvement of this intersection is demonstrated in the current overall LOS F during the PM peak hour. Vehicles making turns at this intersection experience long queues and traffic signal cycle failure. As this interchange is essential for travel through this corridor, the intersection should be programmed as a high priority project.

Project Description: This intersection improvement proposes triple left turn lanes from I-275 west bound and dual left turn lanes for all other movements. This proposed improvement will require approximately 4.0 acres of new R/W, with 2 to 3 commercial property relocations.

Preliminary Cost:
\$28,000,000
(2017 dollars)

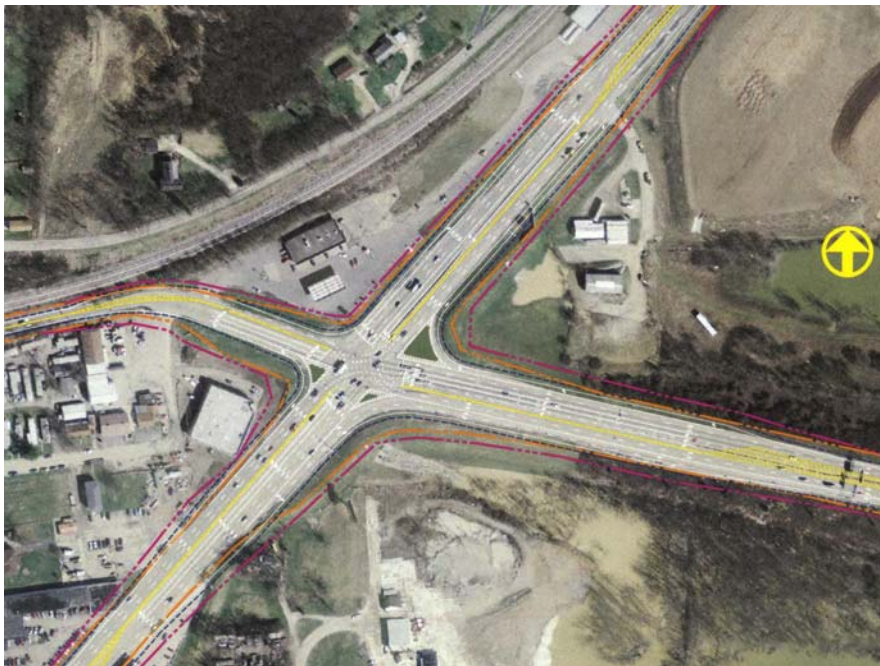


Figure 5.02-8 Intersection Improvement: US 50 at I-275 Interchange